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**दुध, दही, छाछ, मक्खन, धी**

- सब एक ही वंश के है, फिर भी  
सबकी कीमत अलग है क्योंकि  
श्रेष्ठता जन्म से नहीं, बल्कि अपने

**कर्म, कला और गुणों**

से प्राप्त होती है।



Hindi	जय गौमाता
Punjabi	ਮਾਂ ਗਾਂ ਦੀ ਪ੍ਰਸ਼ੰਸਾ ਕਰੋ
Gujarati	જય ગૌમાતા
Marathi	आई गायीची स्तुती करा
Telugu	తల్లి ఆవును స్తుతించండి
Kannada	ತಾಯಿಯ ಹಸುವನ್ನು ಸ್ತುತಿಸಿ
Malayalam	സ്തൂതി അമ്മ പശുവിനെ
Tamil	தாய் மாடு புகழ்
Orria	ମାତା ଗାଈ cow କୁ ପ୍ରଶଂସା କର ।
Bangla	মা গরু প্রশংসা
English	Jai Gaumata
Urdu	مان گائے کی تعریف

Note for all translators: - The above has been done thru google translator, please check in case updating required. Konkani, tulu and Assamia language translation not available. Respective translator can add.

## 1. Kamdhenu Gaumata and slokas in scriptures.

Indian History is also full of stories that underline the importance of indigenous Indian breed cow. They have some unique features like hump on their back that has the special power to absorb the sun's energy with the help of the 'solar pulse' situated on their humps running through the spine, a unique colour and a curved backline; The Suryaketu Nadi, located in the cow's back absorbs all the positive and medicinal energy from the sunlight and the atmosphere, leading to more nourishing milk, cow dung, and urine. Our research further endorses the greatness bestowed on Indian breed [desi] cow by our ancestors and further underlines the importance of it to develop a great nation. These special and unique features in the Indian cows were developed during the course of evolution and celestial origin for ages, which is the reason why they are very popular across the planet.

### ***Ancient and Traditional state of Bovine***

The cow is a living heritage not just of Hindus but of humanity. In the world traditions the cow stands for fertility, prosperity and life, and is often called the mother-ancestor, perhaps for being the first mammal to be domesticated by man. She has an aura of holiness and of mystical power, despite being raised as livestock for meat in present times. A foreign scholar once pointed out that during famine, 'the cow is far more useful as a creature that can produce limitless amount of milk, than as a dead beast that would provide meat for a limited period only.'

Divinity is locked up in the anatomy of cow as she is said to embody the elements of purity, reality and existence. Her face epitomizes innocence - her eyes reflect peace, her horns, royalty and her ears, intelligence. Her udders are the fountain of ambrosia in the form of milk; her tail, a stairway to the higher regions of being.

गो सर्व देवमयी, गो सर्व तीर्थमयी।

It means that Gaumata is fruit from all the religious places and has all Gods in herself.

The Vedic Aryans showed great compassion to animals, and chanted prayers so that their tribe may increase. The ***Rigveda (VIII. 102.15)*** likens the cow to be the mother of cosmic forces. She is the daughter of cosmic matter, sister of cosmic energy, and so on. The cow is Aditi 'the boundless', the embodiment of a goddess who supports the universe; her milk and the products made from it are wholesome and nourishing (***Rigveda. VI. 28.5***). This reminds one of ***Al Ghazali*** (1058-1111), the Muslim theologian and philosopher, who observed that 'the meat of a cow is disease, its milk health, and its ghee, medicine.

The hymns of the ***Atharvaveda (IV. 21.1; 3-7)*** seek bounties of the cow besides praying for their welfare. One of these verses (IV. 21.5) says:

'May the cow be our affluence; may the resplendent Lord (Indra) grant us cattle; may the cows yield food (milk and butter) of the first libation (Soma). These cows O men, are sacred as the Lord resplendent Himself; the Lord whose blessings we crave for, with head and heart.'

It is, therefore, not surprising that the word ***aghanya*** - 'not fit to be killed' - is used 21 times for the cow in the ***Rigveda***, the earliest scripture known to mankind. The idea has a near parallel in the Biblical Book of ***Isaiah (66.3)*** which says: 'He that killeth an ox is as if he slew a man.'

Vedic knowledge is likened to ***Kamadhenu***, a bovine goddess, who yields everything from material wealth to salvation. ***Yajurveda (XIII, 42, 48, 49)*** describes the cow as illustrious and inviolable:

'The effulgence of knowledge can be compared to the sun, the heavens can be compared to the sea, the earth is very vast, yet Indra is vaster than her, but the cow cannot be compared to anything.'

Hindus worship the cow due to a number of reasons, religious, socio-economic, medical and scientific. Such is the ardour of reverence for the cow that even her dung is turned into a deity during Govardhan Puja. **Pancha-gavya**, a mixture of cow's milk, curd, ghee, urine and dung, is traditionally consumed during religious rites and also used as medicine to have a cleansing effect on the mind and the body, as advised by Maharishi **Charaka (Charaka Samhita, Chikitsasthanam, 17-23)**, disciple of Agnivesha, and grand disciple of the sage Atreya Punarvasu, who derived his knowledge directly from the creator Brahma.

The cow reminds one of Lord Krishna, also called Govinda and Gopala as he grazed, protected, and nourished cows, of Nachiketa in the **Kathopanishad** and Prishadhara in the **Srimad Bhagavata**, of the twelve Alvar saints in Tamil Nadu, of philosophers and mystics like Nimbarakacharya, Madhavacharya, Vallabhacharya and Chaitanya Mahaprabhu, of saint-poets like Mira Bai and Surdas and, in recent times, of Maharishi Swami Dayananda Saraswati, Madan Mohan Malaviya, Vinoba Bhave and others, who held the cow in great reverence, and professed non-killing, as in the Epistle to Romans( 14.20) : 'For meat, destroy not the work of God.'

These Five Cows were obtained while Samudra Manthan (Churning the ocean) to obtain Amrit (nectar). Below are the Five Celestial Cows and Sages Associated with them –

1. Rishi Jamdagnih – Nanda
2. Rishi Bharadwajah – Subhadra
3. Rishi Vashishthah- Surabhi (Kamdhenu)
4. Rishi Asitah- Sushila
5. Rishi Gautamah- Bahula

#### **A. Shlok on PanchGavya**

1. यत् त्वगस्थिगतं पापं देहे तिष्ठतिमामके,  
प्राशनात् पंचगव्यस्य दहत्वग्निरिवेन्धनं।

The scriptures mention that the consumption of PanchGavya, causes all bad things to decay in the body, in the same way as fuel is consumed by ignited fire. The same mantra is recited while drinking PanchGavya.

2. गव्यं पवित्रं च रसायनं च पथ्यं च हृद्यं बल बुद्धि स्यात् ।  
आयुः प्रदं, रक्त विकार हारि, त्रिदोष, हृद्रोग, विषापहं स्यात् ।

“The five elements obtained from the Cow are sacred and are medicine for the heart. They enhance bodily strength and intellect. They give long life, purify the blood, and balance the Vata, Pitta and Kapha doshas. They cure all diseases and detoxify the body.”

#### **Shlok on Cow Urine (Gau Mutra)**

3. गव्यां सुमधुरां ककांचिद् दोषघ्नां कृभमकुठिनुत्।  
कण्डूघ्नां शमयेत् पीतां सम्यनदोषोदरे दहतम्॥  
सार : - कृभम रोग, कुठि रोग, खुजली और प्लीहा रोग में गोमूत्र सेवन करने से रोग दूर हो जाता है। (चरकसंहिता)

#### Shlok on Dugdh

4. क्षीरात्परं नास्ति च जीवनीयम् ।  
सार :- दूध से बढ़कर कोई जीवन बढ़ाने वाला आहार नहीं है । (कश्यप संहिता)
5. क्षीरं जीवयति  
सार : - दूध जीवनदाता है । (चरकसंहिता)

#### Shlok on Dahi

6. स्निग्धं विपाके मधुरं दीपनं बलवर्धनम् ।  
वातापहं पवित्रञ्च दधि गव्यं रुचिप्रदम् ॥ (सुश्रुत संहिता)
- सार : - दही स्निग्ध, पाक होने पर मधुर, जठराग्नि को तीव्र करने वाला, बलवर्धक और वातनाशक है । गाय का दही पवित्र और रुचिकर है ।

#### Shlok for Ghee

7. विपाके मधुरं शीतं वातपित्तविषाणापहम् ।  
चाक्षुष्यमग्र्यं बल्यञ्च गव्यं सर्पिर्गुणोत्तरम् ॥ (चरक संहिता)
- सार : - गाय का घी गुणों में सबसे श्रेष्ठ है, वह शीतल, वात-पित्त और विष का नाश करने वाला, आँख की ज्योति और शरीर के सामर्थ्य को बढ़ाने वाला है ।

#### B. Shlok on Cow

8. आदौ माता गुरु- पत्नी, ब्राह्मणी राज- पत्निका  
धेनुर धात्री ताथ प्रथ्वी सप्तैता मातरः  
Real Mother, Guru-Patni (Wife of a teacher or spiritual master), Brahmani - the wife of Brahman, Raja-Patnika – Wife of Raja (the king), Dhenu – The Cow (Gau-Mata), Dhatri – The nurse and Prithvi – the mother earth. These are the seven Mother an individual should never forget.
9. तिलम् न धान्यम्, पशुओं न गावः ।  
Just like sesame is the best grain available on earth; similarly, GauMata is the best animal available on mother earth
10. नां केवलां पयसां प्रसूति मवेहि, मां कामदुधां प्रसन्नाम् ।  
Gaumata herself says, when I am happy with your dedication, I bless you with fulfilling all your wishes. Don't mistake me as just milk giving animal.

11.

गौमय वस्ते लक्ष्मी।

Lakshmi, the goddess of wealth, resides in GauMata Dung.

12

सुरूपा बहुरूपाश्च विश्वरूपाश्च मातरः।

गावो मामुपतिष्ठन्तामिति नित्यं प्रकीर्तयेत्॥

Every day we should pray that the beautiful and diverse-looking Vishwarupini Gomata always come close to me.

**C. Shlokas for Arrangements and Departments.**

13.

नन्दः प्रोक्तः स गोपालैर्नवलक्षगवां पतिः।

उपनन्दश्च कथितः पंचलक्षगवां पतिः।

वृषभानुः स उक्तो यो दशलक्षगवां पतिः॥

गवां कोटिर्गृहे यस्य नन्दराजः स एव हि॥

कोट्यर्थं च गवां यस्य वृषभानुवरस्तु सः ॥

(गर्गसंहिता)

A Gopal who has nine lakh cows is called Nanda, who has five lakh cows, he is called Upananda, who has one million cows, Vrishabhanu, who has one crore cows, is called Nandraj and fifty lakh cows are called Vrishanunar.

**D. Shlok on Bulls**

14.

गौर्मे माता ऋषभः पिता मे दिवं शर्म जगती मे प्रतिष्ठा। (ऋग्वेद)

Cow is our mother; bull is our father. May both of them grant us heaven and physical pleasure.

**E. Importance of Milk**

15

a.

स्वादु शीतं मृदु स्निग्धं बहलं श्लक्ष्णपिच्छिलम्।

गुरु मन्दं प्रसन्नं च गव्यं दशगुणं पयः॥

दूध में दस गुण होते हैं— वह स्वादिष्ट, ठंडा, कोमल, चिकना, गाढ़ा, सौम्य(सात्विक), लसदार, भारी, बाहरी प्रभाव को देरी से ग्रहण करने वाला और चित्त को प्रसन्न करने वाला है। (चरकसंहिता)

b.

आयुर्वै घृतम्।

घृत ही आयु है।(आयुर्वेद)

*F. Shlokas on administration and direction for Cow grazing*

16.

गोपालक पिण्डारक दोहक मन्थक लुब्धकाः  
शतं शतं धेनुनां हिरण्यभृताः पालयेयुः।

गो रक्षा की व्यवस्था के लिए उपाय निश्चित किए गए हैं— गोपालक, पिण्डारक (भैंसों को पालने वाला), दोहक(दुहने वाला), मन्थक (दही आदि मथने वाला), और लुब्धक (जंगलों में हिंसक प्राणियों से रक्षा करने वाला) ये पांच—पांच आदमी मिलकर सौ—सौ गायों का पालन करें। (अर्थशास्त्र)

*M. Shlokas on other aspects of Cow.*

17.

गावःश्रेष्ठा पवित्राश्च पावना जगदुत्तमाः।  
ऋते दधिघृताभ्यां च नेह यज्ञः प्रवर्तते।। (महाभारत)

गौएं सर्वश्रेष्ठ सथा पवित्र, पूजा करने योग्य और संसार भर में सबसे उत्तम हैं, क्योंकि दही, घृत आदि गव्य के बिना संसार में कोई यज्ञ सम्पन्न नहीं हो सकता।



## 2. The difference between Native (Desi) and Exotic Cow.

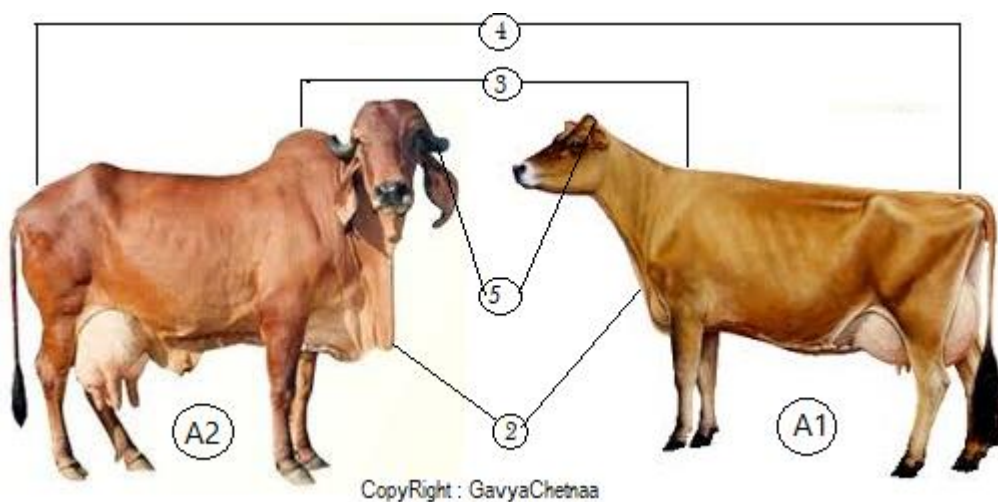
Let us know more about the Genotype and the Phenotype of the Gaumata.

### Genotype

1	Milk of Gaumata is known as A2 milk. Gaumata produces A2 beta-casein a genetic variant of Amino acid-like Proline bonded with another amino acid Isoleucine, which is potent in fighting against many diseases like obesity, Joint pain, asthma, mental problems etc.	Jersey cow milk is called A1 Milk. The jersey, HF etc. cows produce A1 milk where this genetic variant of beta-casein is not found. On the other hand, their milk contains a poisonous chemical named Casomorphine & due to this, it is said to be responsible for diseases like diabetes, cancer, Heart Disease & Asthma.
2	The Quality of Milk is best on earth; however, the quantity is less.	The quality of milk is not at all good, but the quantity is more.
3	Gaumata Milk has certain medical qualities, and doctors advise pregnant women, kids, diabetics and heart patients to consume it.	The milk from these cows should not be consumed and certainly does not reach anywhere near A2 Milk.
4	Cow Urine and Cow Dung is consumed in the form of PanchGavya	Neither the Dung nor the Urine is consumable
5	There are nearly 54 identified species of Gaumata	Artificially or Genetically made to get more milk and beef
6	The dung of the Indian cows contains more microbes and micronutrients approximately 85-90%	the Jersey cow contains 50-60% only
7	Cow Dung, when used in farming, produces quick and good results	Not the case with Jersey Cow.
8	Milk colour is light yellow as it has traces of Gold in it.	Not found here.
9	There is no standardization and categorization of Milk in India. Most of the people might not know that, in European countries, cow milk is categorized as A1 & A2. Indian cow milk is known as A2 Milk & Considered good for health.	Jersey cow milk is categorized as A1 milk. Most of the people would be shocked to know that in European countries, Jersey cow's milk is never used directly as it might cause serious health issues in the long run.
10	Indian cow breeds (Zebu) have Suryaketu Naadi (Hump) on its shoulders which has been known to absorb Vitamin-D from the sun rays and release it in their milk. This is the only reason as to why only Indian Cow's milk contains vitamin-D.	Jersey and HF cows do not have SuryaketuNaadi
11	Indian Cow's milk contains high levels of Omega3 that cleanses the cholesterol from the blood vessels. It also helps in disposing bad cholesterol from the body & increase good cholesterol.	Jersey Cow's milk has no positive effect on cholesterol. On the contrary, it has been known to increase bad cholesterol in the blood vessels.
12	Indian cows maintain hygienic, hardy and clever enough not to sit at dirty places. It also adapts itself as per the climate and can withstand extreme weather.	Jersey/HF cows are known to be very lazy and highly prone to diseases. It has also been seen that they attract infection by not being hygienic enough.
13	Indian Cow has high medicinal value. Cerebrosides present in their milk increases brain power, strontium enhances body immunity and protects the human body from harmful radiations. Not only milk, Indian Cow's urine, dung, ghee, curd also have invaluable medicinal properties. Cow products are used in PanchGavya Chikitsa to cure many harmful diseases.	Jersey cow's milk, dung, & urine have no medicinal value.
14	All proteins are long chains of amino acids. Beta casein is a chain of 229 amino acids in length. Cows	A1 milk releases in the human body the peptide called BCM7 (Beta-Casomorphine). This is an

	that produce this protein in their milk with a proline at number 67 are called A2 cows and are the older breeds of cows (e.g. Guernsey, Asian and African cows).	opium family substance and has been associated with a very large number of diseases.
15	This milk is very beneficial for all age of people.	One litre A1 milk contains 24-32 grams of casein of which 9 to 12 grams is BCM 7 (about 2 teaspoons).
16	Very beneficial for Infants. In fact, if mothers' body is not able to produce milk, Infants can survive on GauMata Milk.	BCM7 destroys insulin in infants causing Diabetic type 1. Blood-Brain Barrier is formed in the human body after 3 to 4 years. BCM7, in infant, milk is associated with Autism, Diabetes type 1 and Sudden death syndrome in infants.
17	Whenever any unknown person comes near desi cow, she will immediately stand	No emotions displayed by her

### Phenotype (Physical Traits)



1	Milk of Gaumata is known as A2 milk.	Jersey cow milk is called A1 Milk.
2	Gaumata has dewlap: a flap of skin beneath their neck.	These cows don't have it.
3	They have a Hump. The hump enables the bull to work in farms like ploughing land.	These cows don't have it.
4	The back is curved especially at the rear part.	Their back is straight throughout the body.
5	They have, usually, big Horns.	Horns are missing in these cows.
7	Gives more calves, on average 10-12 and some can be beyond 15.	It gives very fewer calves in its lifetime.
8	Hence if compared, it gives more milk in its lifetime.	It gives less milk compared to the lifetime quantity.
9	Very Active in Nature and shares warmth with all.	Sits idle and very inactive. Likes to sit at one place.
10	The dung of the Indian cows contains more microbes and micronutrients approximately 85-90%	the Jersey cow contains 50-60% only
11	Cow Dung, when used in farming, produces quick and good results	Not the case with Jersey Cow.
12	Milk colour is light yellow as it has traces of Gold in it.	Not found here.
13	There is no standardization and categorization of Milk in India. Most of the people might not know that, in European countries, cow milk is categorized	Jersey cow milk is categorized as A1 milk. Most of the people would be shocked to know that in European countries, Jersey cow's milk is never

	as A1 & A2. Indian cow milk is known as A2 Milk & Considered good for health.	used directly as it might cause serious health issues in the long run.
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18	All proteins are long chains of amino acids. Beta casein is a chain of 229 amino acids in length. Cows that produce this protein in their milk with a proline at number 67 are called A2 cows and are the older breeds of cows (e.g. Guernsey, Asian and African cows).	A1 milk releases in the human body the peptide called BCM7 (Beta-Casomorphine). This is an opium family substance and has been associated with a very large number of diseases.
19	This milk is very beneficial for all age of people.	One litre A1 milk contains 24-32 grams of casein of which 9 to 12 grams is BCM 7 (about 2 teaspoons).
20	Very beneficial for Infants. In fact, if mothers' body is not able to produce milk, Infants can survive on GauMata Milk.	BCM7 destroys insulin in infants causing Diabetic type 1. Blood-Brain Barrier is formed in the human body after 3 to 4 years. BCM7, in infant, milk is associated with Autism, Diabetes type 1 and Sudden death syndrome in infants.
21	Whenever any unknown person comes near desi cow, she will immediately stand	No emotions displayed by her

### 3. PanchGavya and its Usefulness.

PanchGavya is a blend of the 5 Gavyas obtained from the GauMata namely milk (गोदुग्ध, दूध), Ghee (गोघृत, घी), Curd (गोमुत्र, मूत्र), Urine (गोदघी, दही) & Dung (गोमेह, गोबर). All of the Gavyas need to be added in equal proportion.

Let us learn some more synonyms of each of the Gavyas.

Sr. No.	Gavya	Sanskrit	Hindi	English	Synonyms
1	Milk	Dugdh	Dudh	Milk (Latin-Lactus)	पेय, अमृत, पियुष, क्षिर, बलसत्रमी, सौम्य, स्वारी, सतमी
2	Curd	Dadhi	Dahi	Curdled milk	क्षीरज, दधी, पयस्य, तक्रजन्म, नवनीतोद्भव, मांगल्य
3	Ghee	Ghrut	Ghee	Ghee	अभिधार, जीवनीतज, आधार, सपिर, हवि, पवित्र
4	Urine	GauMutra	Gau ka Peshab	Cow Urine	स्त्रवण, सुरभीजल, गोजल, गोअम्भ, गोद्रव, गोपानीय, मेहन, मूत्र, गोझरण.
5	Dung	Gaumay	Gobar	Cow Dung	गोविट्, गोशकृत, गोपुरीषम्, गोविष्ठा, गोमलम्

Let's understand the Religious and Medicinal Significance of PanchGavya.

#### 3.1 Religious Significance

None of the auspicious works of Hindus are complete without them. Even today, PanchGavya distribution is given priority in the form of prasad in all Hindu religious festivals throughout India. PanchGavya is used for home purification and body purification. According to "theology", there is a law to drink PanchGavya as an atonement for a sin. Before drinking PanchGavya, say – "O Sun God! Hey Agnidev! You are going to destroy all diseases of my body, mind, intelligence and bones. Hence, I drink it." Say this 3 times. Then nothing should be taken for 2-3 hours.

PanchGavya creates a protective sheath around the seeker, and this restrains negative energies from posing obstacles in spiritual practice. With the help of the Panchatattva (The five Cosmic Principles), the PanchGavya (a mixture of cow's milk, curd, ghee, cow's urine and cow dung) attracts frequencies of superior and inferior Deities; it forms a protective sheath, on earth and in the atmosphere. This protective sheath is composed of upward and downward mobile frequencies of Chaitanya (Divine consciousness). This ensures that the worshipper gets maximum benefit of the Chaitanya emitted from the rituals and restrains the negative energies from posing obstacles in this process of emission of Chaitanya during the puja. Since a seeker in the initial stages has less BHAV (Spiritual emotion) towards God, the PanchGavya serves as a medium of ensuring benefits, by being conducive to his protection.

#### 3.2 Medicinal Significance

It is recognized as a medicine in Ayurveda. If the five are used together by mixing it, it becomes a panacea for our health and wellness. PanchGavya eliminates diseases by increasing the immunity of the body. These are all different and have the best medicinal properties as a combination, that too, without any adverse side effects. Apart from this, if we are taking any other medicine, then PanchGavya acts as a catalyst.

Each and every ingredient of PanchGavya is endowed with full and important qualities and is miraculous. Let's learn in detail, each and every ingredient individually, their benefits and uses as well.

Colour of the GauMata is also responsible for being helpful in particular diseases. Let's look into how colour helps us.

PanchGavya of Red Cow:	Solve problem-related to Pitt. Milk increases blood.
PanchGavya of White Cow:	Solve problem-related to kaph. Milk is very light to digest.
PanchGavya of Black Cow:	Solve problem-related to Vaat. (Milk solves the gas-related issue)
PanchGavya of multicoloured (Piebald) Cow:	Increases Pitt and makes a person very sportive
GauMata's Milk	Gives power and cooling to the body. Must take 200-400 gram per day.
GauMata's Ghee	Solve all Tridosha problems. Take 20-40 grams per day.
GauMata's Curd	Good of man purifies blood full of energy. Take 20-30 gram per day.
GauMata's Urine	Solve all Tridosha problems and is a simple solution for over 100 health problems. Take 25-50 ml. daily.

Various medical formulations of PanchGavya, like Adi PanchGavya Ghrut, Amritasara, Ghanavati, Ksharavati, Netrasara are invaluable medicines in the Ayurvedic system. PanchGavya of the cow is a donor of great nectar pleasing to the heart, proper diet, mental and physical strength, enhances longevity. It balances bile, mucus and barbs. The effect of poisoning and heart diseases is also nullified by regular intake of PanchGavya. Gomay and GauMata Urine collected from GauMata, giving less milk is always good because more energy goes in producing milk. Hence, less milk; better the Gomay and GauMata Urine, more milk, less quality of Gaumay and Gaumata urine.

### 3.3 For family (human health)

PanchGavya taken daily by an individual can keep a person healthy and hearty. Dreaded diseases like psoriasis, any skin disorders, eczema, split wound heal very fast upon consumption of PanchGavya. There are references where the lady who had psoriasis was preparing PanchGavya, and she noticed that her hand was cured. Following her intuition, she applied PanchGavya on her body and to her surprise, psoriasis got cured in 21 days.

This implies that PanchGavya can be used for human ailments.

Any person can start taking PanchGavya orally in the following manner. 50 ml to 60 ml of PanchGavya mixed in a glass of water or fruit juice or tender coconut water will keep everyone away from all types of diseases.

Let us learn how to prepare, and what is required to prepare PanchGavya, what needs to be taken care of before preparing the PanchGavya.

PanchGavya should only be prepared from GauMata with Surya Ketu Nadi. Desi cows (GauMata) falls into this category. All the elements necessary for humans are found in their products. According to Maharishi Charak, cow urine is bitter and pungent. Its properties include heat, rashyukta, agnandipak. The urine contains nitrogen, sulfur, ammonia, copper, iron elements, uric acid, urea, phosphate, sodium, potassium, manganese, carbolic acid, calcium, salt, vitamin B, A, D, E; Enzymes, lactose, hippuric acid, kryatinin, arym hydroxide are mainly found. Urea diuretics are germicides. Potassium is

an appetizer, blood pressure regulator. Sodium regulates fluid volume and nervous power. Magnesium and calcium regulate heart rate.

### 3.4 *Farmers*

PanchGavya spray is very effective on almost all the crops. The crops show great productivity and growth compared to the no PanchGavya Spray. It acts as a growth-promoter and immunity booster for the crops. In several parts of India, PanchGavya usage in farming has been revolutionizing and revitalizing the crop. To prepare 20 KG of PanchGavya, the following quantity of ingredients are required. Approximate cost per kg of PanchGavya comes to be nearly Rs 30 to Rs 35.

1. Fresh GauMata Dung	5 Kg
2. Fresh GauMata Urine	3 Litres
3. Fresh GauMata Milk	2 Litres
4. GauMata Curd	2 Litres
5. GauMata Ghee	½ Kg
6. Sugarcane Juice	3 Litres
7. Tender Coconut water	3 Litres
8. Banana ripe	12 pieces
9. Toddy or grape juice	2 Litres.

In ancient times, honey was used to accelerate fermentation. However, looking into the cost of honey these days, people switched to jaggery. Sometime back it was known that even jaggery is mixed with a chemical. Hence, the safest and purest form of sugar was found to be sugarcane juice. PanchGavya emits a foul smell and to control the smell, Toddy was added. This also enhanced the fermentation process. Tender coconut water enhances fermentation and also activated the growth of meristem at a faster rate since it contains cytokinin.

#### **The process to prepare PanchGavya:**

Use broad mouth containers made from Mud or concrete or steel. Plastic can also be used, but try to avoid it. Never use any Metal container. Mix the fresh Gaumata Dung and Gaumata Ghee in the container. Stir it properly twice a day for 3 days. On the fourth day, add the remaining ingredients into the mix. Stir the same twice a day for the next 15 days.

Keep the same in the shade or cover it to protect from the flies laying eggs. This can be used for 6 months without any loss of quality. If water is needed, keep adding as per your requirement.

#### **Alternates –**

1. If Sugarcane juice is not available, use a mix of 500 gm jaggery into 3 litres of water.
2. If Toddy is not available, use a mix of 100 gm of yeast powder, 100 gm of jaggery into 2 litres of warm water. Add this mix after 30 to 40 min into the PanchGavya.
3. Another method to prepare Toddy is to take 2 litres of fresh coconut water and keep it in a tight container for 10 days. After fermentation, it becomes Toddy.

### 3.5 *Plants*

Leaf, Stem, Roots and the yield get benefitted by using PanchGavya as a spray or manure for the plant. A spray of PanchGavya on plants produces bigger leaves and dense canopy. It enhances the photosynthesis system for biological efficiency. The trunk produces side shoots, which are sturdy and capable of carrying maximum fruits to maturity. Profuse and dense roots come up. They remain fresh for a long time. The spread of roots and the deeper growth is also observed in plants to get the maximum nutrients from the ground. The Land is made fertile by using PanchGavya, and it is observed that the produces is advanced by as much as 15 days in all the crops.

Produce from the PanchGavya enhances the shelf life of the vegetables, grains and fruits along with improvement in taste. Replacing chemical-based agriculture with PanchGavya based agriculture, the farmers get economic gains and are relieved from the loans as well.

### **Cow Dung (Gaumay)**

Also known as Gobar (गौबर) in Sanskrit, cow Dung is the most expensive thing that GauMata has given us. Gobar is basionyms of two words; Gau (GauMata) and var (the best). It is the best Gavya that GauMata has given us.

Cow Dung is an excellent seed protector. It helps seeds from pests. In olden times, our ancestors used to use Cow Dung for flooring. This ensured that the flies would not sit on the floor. Ensure that the insects and reptiles do not enter home. Cow Dung is an excellent antiseptic, skin tonic and tooth polish.

Cow dung is superior to other dung because it is antiseptic and has prophylactic (disease preventive) properties. It destroys microorganisms that cause disease, fermentation and putrefaction. Other dungs need to be composted to be purified. It should be kept in mind that fresh cow dung is pure, but once it has laid on the ground awhile, it starts to change. Cow dung as described in our Scriptures is a definite indication of prosperity evident from Gobar-dhan Puja, next day of Deepawali (a very popular festival of India during Oct. or Nov.).

Cow dung has antiseptic, anti-radioactive and anti-thermal properties. We clean the floors of the house and coat walls with dung; it protects the living people. In 1984, more than 20,000 people died due to gas leaks in Bhopal. People living in houses with cow dung coated walls were not affected. Even today, nuclear power centres in India and Russia use shielding dung to radiation. Burning cow dung balances atmospheric temperature and kills germs in the air. We can also reduce the amount of acid in water by treatment with cow dung.

In short, GauMata Dung is purifying, antiseptic agent; stops gas disorders; pesticide and fertilizer; in India, dried dung is used like charcoal; it is also a form of energy-producing methane gas.

### **Cow Urine (Gau Mutra)**

Cow Urine is a rare gift that mankind has got. Found spontaneous fanatically in the Indian subcontinent. It's harmless, used in human welfare and health protector chemical. It is sustaining the health of a healthy person, kills the germs of dreaded diseases. Its compositional properties are heated, juicy, and basic in nature. Its amazing germicidal power to kill varieties of germs destroys all the germs related to diseases. If there is any 'Sanjivani' in Ayurved, then it is Gaumata Urine. Cow urine is great elixir, proper diet, pleasing to heart, the giver of mental and physical strength, enhances longevity. It removes all blood disorders.

Gaumutra acts as an antidote for phlegm, abdominal diseases, eye diseases, and bladder diseases, lumbar, Kas, respiratory diseases, inflammation, inflammation, liver diseases. In medicine, it is used as internal and external use. It is extremely useful in many chronic and incurable diseases. Urea diuretics are germicides. Potassium is an appetizer, blood pressure regulator. Sodium regulates fluid volume and nervous power. Magnesium and calcium regulate heart rate.

GauMata Urine stops gas disorders; cures all ailments born from mucus, bile, and gas; help with acidity, stomach disease, and more; removes leprosy and other skin diseases. Cow urine being a miraculous poisons destroyer, destroys the disease caused by poisons or toxins. Cow urine provides immunity by increasing resistance power in the human body. By regularly taking cow urine before sickness, we gain so much immunity that any attack of diseases is repulsed

During the spiritual healing, Gaumutra heals the root cause of the problem with maximum effect. For example, skin rash is caused by negative energies. The only disadvantage of Gaumutra is its smell or taste; however, the advantages outweigh this only one disadvantage.

**Chemical content of Gaumata Urine and the cure.**

Sr. No.	Chemical Name	Effect of disease
	Nitrogen – N <sub>2</sub> , NH <sub>2</sub>	-Removes blood abnormalities and toxins. -Natural stimulant of the urinary tract. -Activates kidneys and it is diuretic (causing increased passing of urine).
2	Sulphur - S	-Supports motion in the large intestine. -Cleanses Blood.
3	Ammonia – NH <sub>3</sub>	-Stabilize bile, mucous and air of body. -Stabilizes blood formation.
4	Copper - Cu	Controls built up of unwanted fats.
5	Iron - Fe	-Maintains balance and helps in the production of red blood cells and Haemoglobin. -Stabilizes working power.
6	Urea – CO(NH <sub>2</sub> ) <sub>2</sub>	-Removes blood abnormalities and toxins. -Natural stimulant of the urinary tract. -Activates kidneys and it is diuretic (causing increased passing of urine).
7	Uric Acid – C <sub>5</sub> H <sub>4</sub> N <sub>4</sub> O <sub>3</sub>	-Removes heart swelling and inflammation. -it is also diuretic.
8	Phosphate - P	-Helps remove stones from the Urinary tract.
9	Sodium - Na	-Purifies Blood. -Antacid.
10	Potassium - K	-Cures hereditary rheumatism. -Increases Appetite. -Removes muscular weakness and laziness.
11	Manganese - Mn	-Germicidal stops the growth of germs. -Protects decay due to gangrene.
12	Carbolic Acid - HCOOH	-Germicidal, stops the growth of germs. -Protects decay due to gangrene.
13	Calcium - Ca	-Blood Purifier. -Bone strengthener.



		-Germicidal.
14	Salt - NaCl	-Decreases acidic content of the body. -Germicidal.
15	Vitamins – A,B,C,D,E	-Vitamins are active ingredients of energetic life. -saves from nervousness and thirst. -Strengthens bones and reproductive ingredient for energetic life and reproductive power.
16	Lactose – C <sub>6</sub> H <sub>12</sub> O <sub>6</sub>	-Gives Satisfaction. -Strengthens Mouth, heart. -Removes thirst and nervousness.
17	Enzymes	-Make healthy digestive juices, increase immunity.
18	Water – H <sub>2</sub> O	-Maintains fluidity of blood. -Maintains body temperature.
19	Hipuric Acid - CgNgNox	-Removes toxins from urine.
20	Creatinin – C <sub>4</sub> HgN <sub>2</sub> O <sub>2</sub>	-Germicidal.
21	Aurum Hydroxide - AuOH	-It is germicidal and increases immunity power. -It is highly antibiotic and antitoxic.

It is also said that Gaumutra is a pious as GangaJal (Sacred water for Hindus that is used in all the festivities throughout the year). The ingredients found in Gangajal and Gaumutra are much similar. No other animal or human beings mutra has so many ingredients as our GauMata. Upon boiling the Gaumutra, we get khoa (खोआ) that is full of minerals, vitamins and used for various ailments. Regular intake of these Khoa tablets keeps an individual healthy. Distilled cow urine, popularly known as an ark, is effective in treating flu, arthritis, bacterial diseases, food poisoning, indigestion, inflammation, and leprosy.

In short, GauMata Urine stops gas disorders; cures all ailments born from mucus, bile, and gas; helps with acidity, stomach disease, and more; removes leprosy and other skin diseases. Cow urine being a miraculous poisons destroyer, destroys the disease caused by poisons or toxins. Extremely dangerous chemicals are purified by cow urine. Cow urine provides immunity by increasing resistance power in the human body. By regularly taking cow urine before sickness, we gain so much immunity that any attack of diseases is repulsed.

### **Cow Milk (Gau Dugdha)**

GauMata milk has been part of our diet (Indian Subcontinent) since ancient times. There is no nutritious and balanced diet like Cow's milk. It is considered nectar. It is very suitable for digestion and its sweet, cold, aerated sedative in taste. Every house used to have a cow in the courtyard. The GauMata used to feed the family with their nutritive milk. Ayurveda describes the milk from GauMata as sweet, cooling and of high nutritious value to our vital organs. GauMata milk is lauded for its mind-calming properties, its improvement of "Sat Guna" (Good quality, peculiarity, attribute, or tendency) and the positive energy it infuses in humans.

Opposite to the milk from the Jersey or Holstein or F.S. cows, Indian breed cows' milk has a high nutritional value and holds a lofty position among the milk that has health and curative strength against several diseases. The milk from Indian breed cow is referred to as A2 milk.

Organic colostrum benefits and rebuilds the human body on a deeper fundamental level. The health benefits of colostrum milk can be attributed to these important compounds like fatty acids, all essential amino acids, etc. Naturally occurring IGF-1 (like insulin stands for Growth Factor 1) can be considered the crown jewel of why GauMata colostrum benefits human longevity potential so well. Lactobacillus acidophilus in raw colostrum is a strain of healthy bacteria that is an important part of the human immune system. There is prebiotics in organic colostrum that feed naturally occurring acidophilus as well as any strains of good bacteria already present in your body.

### **Nutrients in Milk**

#### **1. Vitamins.**

- a. Contains vitamin D which assist the body to get calcium and phosphorous essential to growing teeth and bones
- b. Riboflavin provides carbohydrate for energy.
- c. Contains Vitamin B12 vital for red blood cell formation
- d. Contains Vitamin A necessary for immunity and vision

#### **2. Minerals**

- a. Calcium essential for healthy teeth, strong bones. Also vital for blood pressure and muscle function.
- b. Phosphorous assists in building healthy teeth and strong bones. Also, assist in producing proteins for cell and tissue growth.
- c. Potassium is essential for healthy functioning of body organs, tissues and cells. Also, it helps to regulate blood temperature.

#### **3. Protein**

A2 milk is reasonable sources of consuming A2 protein.

In short, GauMata Milk contains every nutrient that is required for the growth of the human body; increases the physical, mental, and spiritual power of the human being; a complete food, it slows down the ageing process and increases intelligence and strength; regulates and increases the duration of life.

### **Cow Ghee (Ghrut)**

GauMata ghee, also known as clarified butter in the west, is loaded with many benefits that include cleansing our stomach and detoxifying our body. It effectively boosts the digestive system, especially the ghee, which is from the green grass-fed GauMata. People with weak digestion should add ghee in their food on a daily basis. It will balance the Tridosha without diminishing the digestive potential of the body. Ghee is loaded with essential nutrients, fatty acids, anti-bacterial, anti-fungal, anti-oxidant and anti-viral properties. It is cool, sweet and full of saturated fats. One should make a habit of having 2 spoon ghee before lunch and dinner. The ghee should be in a liquid state while being consumed. The older the ghee, the more medicinal value it has and more costly it will be.

In an ideal situation, we should add a spoon of ghee and pinch of turmeric to a warm glass of milk and consume before going to bed. This will enhance your digestion and clean the stomach in the morning. Cow ghee is especially useful for the eyes. Ghee is used to increasing the capacity of the body and for mental development. Its intake is considered to be radiant.

Ghee has a very high frying point. Hence cooking food in ghee will ensure that the ingredients of ghee are intact. Kids below 5 years should be given ghee as this will boost their physical growth, especially the brain growth that happens during this age. People with Lactose intolerance and casein intolerance can still consume ghee. The best way to have ghee is to take it fresh. Minimum one T-Spoon a day to maximum 4 T-Spoon a day. For old age people, ghee very beneficial. They usually suffer from forgetfulness, nervous disorders, inflammation etc. Ghee has butyric acid, a short-chain fatty acid that nourishes the cells of the intestines.

People who have stress, anxiety situation, ghee will help improve their digestion. Excellent for people who are recovering from any illness. At the end of any detoxification program, all are given food rich with ghee. This will add all the ingredients to the body and will help build the strength again.

The ghee available in the market is prepared by the just churning the milk at an extremely high speed. This separates the ghee from the milk; however, the same has no smell or taste. To sell it, the essence and taste enhancers are added as per the need.

There are a lot of benefits of having ghee early in the morning. Ghee acts as a 'Rasa', according to Ayurveda. Rasa is the essential nutrient which can nourish all the cells of your body when consumed empty stomach. Ghee can keep your skin moisturized naturally and prevent dry skin. This brings natural glow over the skin. It can prevent joints pain and arthritis as it contains omega-3 fatty acids which can prevent osteoporosis by boosting bone health.

### **Butter Milk (Gau Curd)**

It is one of the healthiest things that an individual can drink. Its typical refreshing things available in many countries. In Germany and India, it is a special drink. Once the curd is prepared, we churn the same and get two biproducts. One is butter, and the other is buttermilk. Here, special attention has to be given that the churning should be on both the direction, unlike mixer. The blade in mixer moves in one direction only; however, the same is not good for making buttermilk. It is the creamy biproduct that remains after the fat globules come together to form butter. The tart liquid that is left over is naturally fat-free and contains diacetyl, the compound that gives buttery aroma. Buttermilk is a low-fat drink enriched with proteins, potassium and B Vitamins. For lactose-intolerant people, it is easily digested without any issue.

GauMata curd is also equally rich in sustenance. It contains digestible proteins and beneficial bacteria that help increase appetite. Buttermilk made from Cow's curd is easy to digest and eliminates bile. Milk has been used in various ways in Indian culture since ancient times.

**Table: Different types of buttermilk.**

Sr. No.	Description	Ratio (Curd: Water)	Lassi does not fall in the buttermilk category. Its just liquid curd mixed with water and either salt or sugar.
1	Takra (तक्र)	1 : 1	
2	Mattha (मठ्ठा)	1 : 2	
3	Chaas (छास)	1 : 3	
4	Majiga (मजिगा)	1 : 4	
5	More (मोर)	1 : 5	

### ***Some Major Scientific Researches Related To Bovine***

1. **Review on Panchagavya** , T.Shivkumar, PG and Research Department Of Microbiology, Kanchi Shri Krishna College Of Arts and Science, Kilambi, Krishnapuram, Kanchipuram-63151,
2. **AGNIHOTRA: A Non Conventional Solution To Air Pollution**, Pushpendra K.Sharma, S.Ayub, C.N Tripathi, S.Ajnavi, S.K Dubey, International Journal Of Innovative Research In Science And Engineering.
3. **Analysis Of Cow Dung Microbiota- A Metagenomic Approach**, D.Girija, Francis Xavier, Irin Antony, and PR Shidhi, Indian Journal Of Biotechnology.

#### 4. Indigenous Cattle Breeds of India

Sr.	Breed	District	State	Comment	Synonym	Color
1	Bachaur	Sitamarhi, Darbhanga, Madhubani	Bihar	Bachaur cattle are now concentrated in the areas adjoining Nepal border comprising Bachaur and Koilpur subdivisions of Sitamarhi district.	Bhutia	White and Grey
2	Badri	Nanital, Almora, Bageshwar, Pithoragarh, Champawat, Pauri Garhwal, Tehri Garhwal, Rudraprayag, Uttarkashi, Chamoli	Uttarakhand	Altitude ranged from 1200 to 2200 msl and sunshine from 6 to 10 hours per day. Major crops grown in the area are wheat, rice, arhar, soyabean, bajra, barley, potato, etc.	Pahadi	Black, Brown or Grey
3	Bargur	Erode	Tamilnadu	Animals are very sensitive and fiery in disposition and are difficult to train. They are light in built and are developed mainly for carrying out agricultural operations in the uneven and hilly terrain. Cattle of this breed are unsurpassed in speed and endurance in trotting.	NA	Brown with White marking
4.	Belahi	Ambala, Panchkula, Yamunanagar	Haryana, Chandigarh	Breeding tract lies in the foothills of Shivalik in Haryana. Gujjars known as Langarias, are maintaining the breed for generations.	Moorni, Deshi	Reddish Brown & Grey or White.
5.	Binjharpuri	Jajpur, Bhadrak, Kendrapara	Odisha	Whole Jajpur district and adjoining areas of Kendrapara and Bhadrak. Heavy concentration is in Bari, Binjharpur and Dasrathapur area of Jajpur district.	Deshi	White. Some animals are Grey, Black or Brown in colour
6.	Dagri	Godhara/PanchMahal, Dahod, Narmada, Chhotaudepur, Mahisagar.	Gujarat	Mainly for draught purpose. However, it gives less amount of milk. Some cows are not milked by the farmers at all and milk suckled completely by male calf.	Gujarat Malvi	Predominantly white, sometimes with grey shade
7.	Dangi	The Dangs, Thane, Nashik, Ahmednagar.	Gujarat & Maharashtra	Dangi cattle are extensively used for ploughing, harrowing and other field operations, and also for carting timber from forest area. The breed is well known for its excellent working qualities in heavy rainfall areas, rice fields and hilly tracts.	Kandadi	White coat colour with red or black spots distributed unevenly over the body.
8.	Deoni	Bidar, Parbhani, Nanded, Osmanabad, Latur	Karnataka, Maharashtra	The breeding tract lies in the Balaghat range of Sahyadri hills extending from Kannad taluk of Aurangabad to Deglur taluk of Marathwada region of Maharashtra state. The actual place of origin is Deoni, Udgir and Ahmadpur taluks of Latur district.	Surti, Dongarpati, Dongri, Wannera, Waghyd, Balankya and Shevera	usually spotted black and white. This breed has three strains viz. 1- Complete white (Balankya).

						2.- Complete white with partial black face (Wannera) 3-Black and white spotted (Waghyd or Shevera).
9.	Gangatri	Bhojpur, Varanasi, Mirzapur, Ghazipur, Ballia	Bihar, Uttar Pradesh	Medium milk producer and possess good draftability. Derived the name from its habitat, in the area nearby river Ganga .	Eastern Haryana or Shahabadi	Complete white (Dhawar), Grey (Sokan)
10	Gaolao	Balaghat, Chhindwara, Seoni, Durg, Rajnandgaon, Wardha, Nagpur	Madhya Pradesh, Maharashtra	This is a fast trotting type breed suitable for quick transportation in hilly areas. It resembles Ongole very much except that it is much lighter and has greater agility. Nanda Gawali community has developed this breed.	Arvi, Gaulgani	Blackish white in males and White in female. Males are generally grey over the neck.
11	<b>Ghumu sari</b>	Ganjam, Phulbani	Orissa	Western part of Ganjam district and adjoining areas of Phulbani district. Heavy concentration is in Bhanjanagar, Sorada and Aska area of Ganjam district	Deshi	Mainly White sometimes Grey
12	Gir	Amreli, Bhavnagar, Junagadh, Rajkot	Gujarat	Gir cows are good milk producers. Bullocks can drag heavy loads on all kinds of soils, be it sandy, black or rocky.	Bhodali, Desan, Gujarati, Kathiawari, Sorthi, and Surati	Most of the Gir animals are pure red though some are speckled red.
13	Hallikar	Bangalore, Chitradurga, Hassan, Kolar, Mandya, Mysore, Tumkur	Karnataka	The Hallikar breed of cattle is distributed in almost all the districts of south Karnataka and is also found in adjoining areas of Andhra Pradesh	Mysore	White to light grey with darker shadings on shoulder and hind quarters, especially in young breeding bulls.
14	Hariana	Hisar, Rohtak, Sonapat, Gurgaon, Jind, Jhajjar	Haryana	Haryana is a prominent dual purpose breed of north India - widely spread in Indo Gangetic plains. It is primarily reared for bullock production . Cows are also fairly good milkers.	Hansi	Animals are white or light grey in colour. In bulls colour in between fore and hind quarters is relatively dark or dark grey.
15	Himachali Pahari	Chamba, Kangra, Kinnaur, Kullu,	Himachal Pradesh	The ecology of habitat is sub-tropical/sub-humid/temperate/cold mountainous type. The climate is	Pahari, Desi, local,	Primarily black and

		Mandi, Shimla, Sirmaur, Lahul & Spiti		characterized by seasonal variations in temperature, humidity and sunshine. There are three distinct seasons round the year in Himachal Pradesh; winter (October to February), summer (March to June) and rainy (July to September). A snowfall at the elevations of about 3000 m is about 3 m and lasts from December to March.	Gauri, Himdhen u	blackish brown
16	<b>Kangayam</b>	Coimbatore, Erode, Dindigul, Karur, Namakkal	Tamilnadu	Animals true to the type are available in Kangayam and Dharapuram taluks of Erode district, and Karur taluk of Karur district. Bullocks have a good capacity for work and are used for all agricultural operations. Kangayam bullocks alone are used for sugarcane load hauling, though other draught breeds are available in the area.	Kangana d, Kongu	Coat is red at birth, but changes to grey at about 6 month of age. Bulls are grey with dark colour in hump, fore and hind quarters, face and legs. Bullocks are grey. Cows are grey or white and grey. The face of majority of cows is dark grey.
17	<b>Kankrej</b>	Ahmadabad, Banaskantha, Kheda, Mahesana, Sabarkantha, Kutchchh, Barmer, Jodhpur	Gujarat, Rajasthan	Agricultural operations and road transport in village area are mainly carried out by bullocks of this breed. It takes its name from the name of geographical area i.e. Kank taluka of Banaskantha district in Gujarat.	Wadad or Waged, Vagadia, Talabda, Nagar, Bonnai	Varies from silver-grey to iron grey or steel grey. In males fore & hind quarters and hump are slightly darker than the rest of the body.
18	<b>Kenkatha</b>	Lalitpur, Banda, Hamirpur	Madhya Pradesh & Uttar Pradesh	Very popular for light draught on road and for cultivation. The Kenkantha cattle take their name from the river Ken as they are bred along the banks of this river in the area of Bundelkhand.	Kenwaria	Colour varies from grey on the barrel to dark grey on the rest of body.
19	<b>Khariar</b>	Balangir, Kalahandi, Nowpara	Odisha	Nuapada district and adjoining area in Kalahandi and Balangir district. Heavy concentration is in Khariar, Komna, Sinapali and Boden blocks of Nuapada district. Indigenous breed named after the its native tract "Khariar" in Nuapada district of Orissa	Deshi	Mainly Brown, sometimes Grey

20	Kherigarh	Kheri	Uttar Pradesh	Some animals are also found in adjoining Pilibhit district. Bullocks are very good for draught purposes. They run very fast. This breed has been named after the name of area.	Kheri, Kharigarh, Khari	Animals have white coat colour. Some animals have grey colour distributed all over body especially on face.
21	Khillar	Belgaum, Bijapur, Dharwad, Gulbarga, Bagalkote, Pune, Satara, angli, Solapur, Kolhapur, Osmanabad	Karnataka & Maharashtra	Bullocks are known for quick draught capability. Originated from Hallikar or Amritmahal breed of cattle. Khillari means herd of cattle and herdman is known as Khillari or Thillari. Four types of Khillari are prevalent in different parts. Atpadi Mahal in Southern Maharashtra, Mhaswad in Solapur and Satara area, Thillari in Satpura range of hills, and Nakali in adjoining area of this region.	Mandeshi, Shikari, Thillar	Khillaris of Deccan plateau - the Mhaswad and the Atpadi Mahal type are greyish-white. Males are dark over the fore & hind quarters with peculiar grey and white mottled marking on face. The Tapti Khillaris are white with carrot nose and carrot hooves.
22	Konkan Kapila	Thane, Raigadh, Ratnagiri, Sindhudurg, Palghar	Maharashtra	Konkan region exhibits peculiar physiographic set up with undulating terrain throughout the region, except coastal plains. The area ranges in elevation from mean sea level up to 200 to 1425.50 meter. The animals are useful to the farmers in all kinds of agricultural operations. In some of the Konkan area, Konkan Kapila cows are the only source of milk due to non-availability of dairy milk because of lack of transport facilities.	Konkan gidda, Konkan	Animals are of various coat colours, predominant being reddish brown followed by black. However white/grey, mixed, brown or fawn coat colour animals are also available.
23	Kosali	Raipur, Durg, Bilaspur, Janjgir	Chhattisgarh	Predominately seen in the plain area of Chhattisgarh. The ancient name of this region was 'Kowshal', named after the maternal uncle house of Lord Ram. Farmers particularly Yadava/Rawuth community are keeping this cattle generation after generation.		Mainly light red (60-65%), followed by whitish grey (30-35%). Few animals (3-5%) having black coat colour or red with white

						patches also seen
24	Krishna Valley	Belgaum, Bijapur, Raichur, Satara, Sangli, Solapur		Gir cattle from Kathiawar, Ongole from Andhra Pradesh, Kankrej from Gujarat and local cattle having Mysore type blood in them have contributed to the origin of Krishna Valley breed. This is a heavy draught breed and used exclusively in the black cotton soil of the watershed of river Krishna.	Krishna Valley	The common colour is grey - white with a darker shade on fore & hind quarters in males. Adult females are more whitish in appearance. Brown & white, black & white, and mottled colours are often seen.
25	Ladakhi	Leh, Kargil	Jammu & Kashmir	It is a high altitude desert. The main source of water is the winter snowfall on the mountains. The regions on the north flank of the Himalayas—Dras, the Suru valley and Zaskar—experience heavy snowfall and remain virtually cut off from the rest of the country for several months in the year. Summers are short, although long enough to grow crops. The proportion of oxygen is less than in many other places at a comparable altitude because of lack of vegetation. Naked barley, normal barley and wheat are the staple crops all over Ladakh, along with mustard (for oil), lentils and other pulses, and vegetables.		Mostly black followed by brown.
26	Lakhimi	Assam	Assam	The indigenous cattle of Assam locally called as Lakhimi are found in the entire state of Assam. Bullocks are excellent draft animals for carting and ploughing especially in the muddy fields for paddy cultivation. The milk produced by Lakhimi cattle is rich in fat for which it fetches a high price.		Brown & Grey
27	Malnad Gidda	Chikmagalur, Dakshina Kannada, Hassan, Kodagu, Shimoga, Uttara Kannada, Udupi	Karnataka	They play a major role in the rural economy of this region by providing milk, manure and draft power with negligible inputs. The word Gidda means dwarf and Malnad means a place receiving heavy rainfall, where these cattle are inhabited. Malay means hilly, Nadu means place (Malay+Nadu= Malnad) and gidda means small.	Gidda, Uradana ( Meaning village cow), Varshagandhi (gives one calf	The predominant coat colour is black with light shades of fawn on thigh and shoulder region.



					every year)	
28	Malvi	Rajgarh, Shajapur, Ujjain	Madhya Pradesh	Also found in Ratlam district and adjacent areas of Madhya Pradesh. Well known for quick transportation, endurance and ability to carry heavy load on rough roads. Named after its place of origin viz. Malwa region	Mahadeo puri, Manthani	Malvi cattle are white or white greyish - darker in males, with neck, shoulders, hump and quarters almost black. Cows and bullocks become nearly pure white with age.
29	Mewati	Gurgaon, Faridabad, Alwar, Bharatpur, Mathura	Haryana, Rajasthan & Uttar Pradesh	Mewati cattle are powerful and docile, and are useful for heavy ploughing, carting and drawing water from deep wells. Similar to Haryana but there are traces of influence of Gir, Kankrej and Malvi breeds.	Kosi and Mehwati	Mewati cattle are usually white with neck, shoulders and quarters of a darker shade.
30	Motu	Malkangiri	Odisha	Southern part of Malkangiri district and adjoining area of Chhattisgarh and Andhra Pradesh. Heavy concentration is in Motu, Kalimela, Podia and Malkangiri area of Malkangiri district in Orissa. Sandy and clay type soil is predominant. Most of the area is covered with forest. Indigenous breed. Named after local area "Motu" of Malkangiri district in Orissa	Deshi	Mainly Brown (Reddish) sometimes Grey. Few animals are white in colour
31	Nagori	Bikaner, Jodhpur, Nagaur	Rajasthan	Home tract is Nagaur district but animals are also found in adjoining Jodhpur district and Nokha tehsil of Bikaner district. Nagori takes its name from its home tract i.e. Nagaur district of Rajasthan in Western India		Generally white or light grey. In some cases head, face and shoulder are slightly greyish.
32	Nari	Banas Kantha, Sabar Kantha, Pali, Sirohi	Gujarat, Rajasthan	Majority of the Nari cattle population are found surrounding the Aravali forest range. These regions are slightly hilly and undulating area. The climate of the region is semi-arid tropical and has higher mean temperature. The maximum temperature may go up to 45°C during hottest months i.e. April to June. The annual rainfall in the area ranges from 300 to 668 mm.	Sirohi	Varies from white or greyish white in colour in majority of animals and bulls are either white, greyish white or black

33	Nimari	Khargaon / West Nimar, Badwani	Madhya Pradesh	Mainly in Central parts of Khargaon, Badwani districts and very few in the bordering Dhar district and adjacent areas of Madhya Pradesh and adjoining districts of Maharashtra state. Used for all agricultural operations as well as for transportation.	Khargaon , Khargoni, Khurgoni	Brownish red (Copper colour) and white giving spotted appearance (Chitkabri)
34	Ongole	East Godavari, Guntur, Ongole / Prakasam, Nellore, Kurnool	Andhra Pradesh	The breeding tract extends all along the coast from Nellore to Vizianagram. Ongoles have been exported to several countries. USA imported it for beef; Brazil for beef and milk; Sri Lanka, Fiji and Jamaica for draught; Australia for heat tolerance and beef; and Switzerland for disease resistance.	Nellore	Ongole have a glossy white coat called padakateeru by the breeders. Males have dark grey markings on head, neck and hump, black points on knees and pasterns, black muzzle and black eye-lashes.
35	Poda Thurpu	Nagarkurnool	Telengana	Amrabad forest and its adjoining areas of Achampet, Amrabad, Lingal, Padra Mandals are the native habitat of the Poda Thurpu cattle breed. Majority of this cattle population and uniformity/purity of the breed is found in the surrounding areas of Amrabad forest. Bullocks are powerful and very good for heavy ploughing and carting heavy loads. They are quick and agile.	Thurpu	Light brown to dark brown patches on white coat.
36	Ponwar	Pilibhit	Uttar Pradesh	This breed is found in the Puranpur tehsil of Pilibhit district. Animals true to the breed are found in Mainakot, Mazara, Bhirkhera, Faizulaganj and Rajpur Semra villages falling under Madhotanda veterinary Hospital area of Puranpur.	Purnea	Ponwar cattle are usually brown or black with white patches. There is no particular pattern but black and white patches are intermixed.
37	Pulikulam	Madurai, Sivaganda/Pasumpon muthu thevar, Virudhunagar/Kamarajar	Tamilnadu	Bulls are used in Bull riding (Jallikattu) which is very popular game in the area. The animals survive well on extensive grazing in the tropical climate of the area in the open housing system.	Palingu maadu, Mani maadu, Jallikattu maadu, mattu	Dark grey in males and white or grey in females.

					maadu, Kilakattu maadu	
38	Punganur	Chittoor	Andhra Pradesh	The breed tract is confined to the taluks of Punganur and adjacent taluks of Vayalpad, Madnapalli and Palamaner in Chittoor district of Andhra Pradesh. These animals are used for agricultural operations on light soil. Bullocks are used for carts like tongas and for special races.		Punganur cattle are white, grey or light brown to dark brown or red. White mixed with red or black colour animals are also available. Combination of white with brown or black patches is not uncommon.
39	Purnea	Madhepura, Purnia, Katihar, Araria, Kishanganj, Supaul	Bihar	Purnea cattle are distributed in Seemanchal region of Bihar comprising entire districts of Araria, Purnea and Katihar, and the adjoining areas of Kishanganj, Supaul and Madhepura districts. Very good drought and heat tolerant capabilities.		Primarily grey followed by red and black.
40	Rathi	Bikaner, Ganganagar, Jaisalmer	Rajasthan	Rathi animals are particularly concentrated in Loonkaransar tehsil of Bikaner district which is also known as Rathi tract. It takes its name from a pastoral tribe called Rathis who are Muslims of Rajput extraction and lead a nomadic life. Rathi cattle seems to have originated from the mixture of Sahiwal, Red Sindhi, Tharparkar and Dhanni breeds apparently with a preponderance of Sahiwal blood.		Usually brown with white patches all over the body, but animals having completely brown, or black coat with white patches are often encountered.
41	Red Kandhari	Ahmadnagar, Parbhani, Beed, Nanded, Latur	Maharashtra	Pure Red Kandhari animals are found in Kandhar, Mukhed, Nanded and Biloli tehsils of Nanded district; Ahmadpur, Parli and Hingoli tehsils of Latur district. Bullocks are used for heavy work. Origin	Lakhalbunda	The colour is uniform deep dark red, but variations from a dull red to almost brown are also found. Bulls as a rule, are a shade darker than cows.
42	Red Sindhi		Pakistan	The original breeding tract is in Pakistan but some organised herds are available in Orissa, Tamil nadu,	Malir (Baluchistan), Red	This breed has distinctly red colour. Red

				Bihar, Kerala and Assam states of India.	Karachi and Sindhi.	shades vary from dark red to dim yellow. Though patches of white are seen on dewlap and sometime on forehead, no large white patches are present on the body. In bulls, colour is dark on the shoulders and thighs.
43	Sahiwal	Ferozpur, Amritsar, Ganganagar	Punjab, Rajasthan	A few herds of pure Sahiwal cattle are available around Fazilka and Abohar towns of Ferozepur district. One of the best dairy breeds of zebu cattle. It is being utilized for improvement of local stock.	Lambi Bar, Lola, Montgomery, Multani and Teli	Brownish red colour, shades may vary from a mahogany red brown to more greyish red. Extremities in bulls are darker than rest of body colour. Occasionally there are white patches.
44	Shweta Kapila	North Goa, South Goa	Goa	Farmers and elder persons in the Valpoi and Seekeri region (North Goa) are of the view that the milk from Shweta kapila cows is having medicinal properties.	Gaunthi/Gavthi dhavi	White
45	Siri	Darjeeling, Sikkim North, Gyalshing, Namchi, Gangtok, Sikkim East, Sikkim West, Sikkim South.	West Bengal, Sikkim	Bullocks are the only source of draught power.	Trahbum	Animals are either black with white patches or brown with white patches. In some cases they are totally black or brown.
46	Tharparkar	Kutch, Barmer, Jaisalmer, Jodhpur	Gujarat, Rajasthan	Tharparkar animals are found along the Indo-Pak border covering Western Rajasthan and upto Rann of Kutch in Gujarat.	White Sindhi, Grey Sindhi, Thari	Animals are white or light grey. Face and extremities are of a darker shade

				The name of Tharparkar has been derived from the place of its origin i.e. the Thar desert.		than the body. In bulls neck, hump, and fore and hind quarters are also dark.
47	Thutho	Nagaland	Nagaland	Thutho cattle are available in all districts of Nagaland. Climate is hot to warm sub-tropical. Annual rainfall ranges from 1400-1800mm. Well adapted to hilly region and able to graze on hill slopes even during rainfall	Ameshi, Sheapi, Chokru, Tseso	Black or brown, sometimes white patches on face and body
48	Umblachery	Nagapattinam, Thiruvavur	Tamil Nadu	All unions of Thiruvavur district; Keelakur, Kelvelur, Nagapattinam, Thalaignayar, Thirumarugal and Vedaranyam unions of Nagapattinam district of Tamil Nadu. These are light built draught animals developed for work in marshy paddy fields.	Jathimadhu, Mottaimadhu, Molaimadhu, Southern, Tanjore, Therkuthimadhu	Red at birth which changes to grey at three to four months of age. Bulls are dark grey with black extremities. Bullocks are grey in colour with light dark extremities. Cows are grey in colour and light dark grey is present in face, neck and hip region.
49	Vechur	Alappuzha / Alleppey, Kottayam, Pathanamthitta, Kasargode	Kerala	Kuttanad, a unique agricultural tract, which covers Alappuzha, Kottayam and Pathanamthitta; and Kasargod districts of Kerala. Milk production in Vechur cattle is relatively higher than in other dwarf cattle available in this area.		Animals are light red, black or fawn and white.
50	Amritmahal	Chikmagalur, Chitradurga, Hassan, Shimoga, Tumkur, Davanagere	Karnataka	Famous draught breed known for its power and endurance. Animals are fiery and active. Bullocks are specially suited for trotting and quick transportation.	Doddadana, Jawari Dana, Number Dana	Grey, but varies from white to almost black. White grey markings are present on face and dewlap in some animals. Dark shades on neck, shoulder, hump and hind quarters.

## SOME INDIGENOUS CATTLE BREEDS



Rathi



Vechur



Gangatiri



Sahiwal



Badri



Hariana



Kankrej



Tharparkar



Red Sindhi



Deoni



Siri



Amritmahal



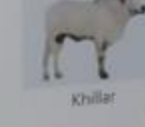
Kosali



Krishna Valley



Ongole



Khillar

॥ कर्मो यत्तुं यत्तुं यत्तुं यत्तुं यत्तुं यत्तुं यत्तुं ॥

## 5. Feeds, Fodder & Gauchar Bhoomi

While we work on betterment of Cow, the first thing that comes to mind is its fodder. If the fodder is proper and in accordance to the cow and area to which it belongs to, we can have best results in the form of milk, Gaumay and Gaumutra. Let us look into the nutritive values of the fodder for cows.

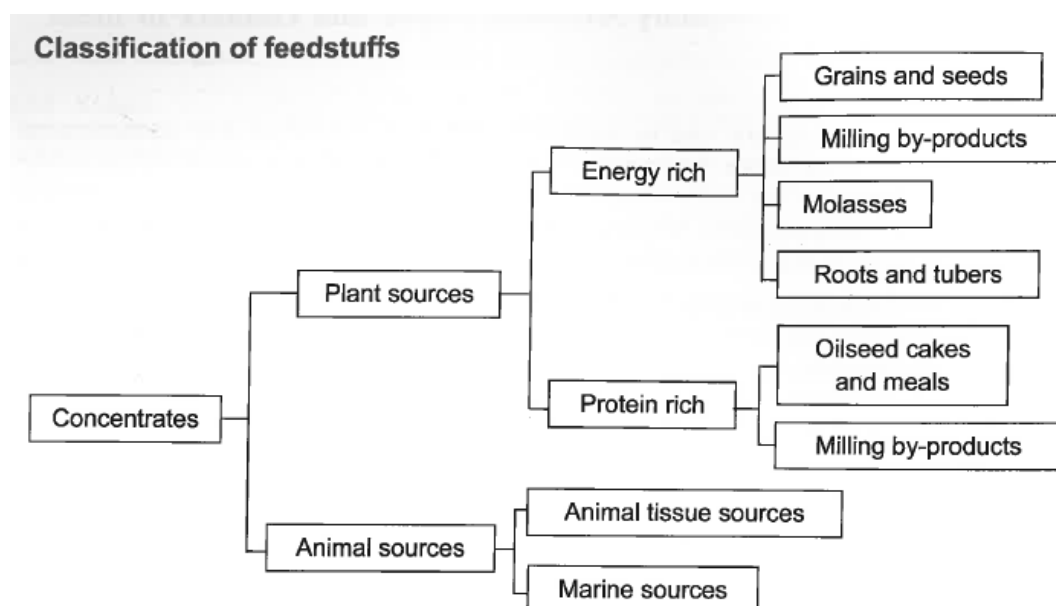
### ***Nutritive Value Of Commonly Available Feeds And Fodders In India***

Livestock plays an important role in sustaining livelihood, nutritional and environmental security and growth of Indian Agriculture. The giant strides made in the livestock sector in the past decades are the major reason for positive growth rates recorded in agricultural sector. While we have achieved horizontal growth in terms of animal numbers, there is a need to achieve vertical growth in terms of improving productivity.

Shortage of feed resources in India has been documented by various organizations but several locally available feed resources used for feeding milkch animals are not taken into account. These include industrial by-products, horticulture and vegetable wastes, local grasses, tree leaves, weeds and other non-conventional feed resources. The available feed resources are not fed in right proportion as per the requirement of animals, leading to imbalance of nutrients in the ration. The compound cattle feed manufactured by various agencies in different sectors doest not usually meet the specific requirement of animals which includes species, breed, stage of lactation, physiological status of animals, quality of basal roughages etc. In view of this, it has not been possible to fully realize the genetic potential of milch animals. Despite shortage, milk production and the productive life of dairy animals can be improved substantially if the available feed resources are utilized judiciously.

Feeds are classified into three parts.

1. Concentrates
2. Roughages
3. Unconventional Feeds.



Let us know more details on each of these classifications.

## **A. Concentrates.**

A concentrate is usually described as a feed or feed mixture which supplies primary nutrients (protein, carbohydrates and fat) at a higher level but contains less than 18% crude fibre (CF) with low moisture. In general, concentrates are feeds that are high in nitrogen free extract (NFE) and total Digestible Nutrients (TDN) and low in crude fibre.

On the basis of crude protein content of air-dry concentrates, these are classified as either energy rich concentrates when crude protein (CP) is less than 18% or protein rich concentrates when the CP is more than 18%.

### **1. Energy Sources**

These are described under the following categories-

**[A]** Grains and Seeds

**[B]** Milling by-products

**[C]** Molasses

**[D]** Roots and Tubers.

**[A] Grains & Seeds** – Grains and Seeds from cereal plants, members of the grass family called Graminaea. Cereal grains are essentially carbohydrates, the main component of the dry matter being starch, which is concentrated on the endosperm. All cereal crops are annuals [kharif]. By-products of harvested grains as chaff, stover and straw are utilized as low-quality forages for ruminant animals. In India except for poultry, swine and lactating dairy animals, grains are not usually fed for livestock production, because of high cost due to high demand by human beings.

#### **1. Maize – [Zea mays]**

**Synonym:** Corn

**Local names:**

Hindi: Makka, Makai, Bhutta

Manipuri: Chujak

Marathi: Bhutta

Tamil: Makka Cholan

Malayalam: Makka Cholan

Telugu: Mokka javanalu

Kannada: Makkejola

Konkani: Mako

Urdu: Makka

#### **2. Sorghum [Sorghum bicolor]**

**Local names:**

Hindi: Jowar

Marathi: Jowari

Tamil: Cholan

#### **3. Wheat [Triticum aestivum]**

**Local Names:**

Hindi: Gehun

Kannada: Godhi

Manipuri: Gehun

Marathi: Gehun

Sanskrit: Arupa, Bahudugdha, Godhuma

Tamil: Godhumai , Godumbaiyarisi

Telugu: Godumalu

Urdu: Gehun



**4. Barley [Hordeum vulgare]**

Local Names:

Hindi: Jav, Jau

Kannada: Jave-godhi

Malyalam: Barli, Yavam

Marathi: Satu, Jav

Sanskrit- Aksata, Akshata, Dhanyaraja

Tamil: Barliarisi

Telugu: Barlibiyam, Dhanuabhedam

Urdu: Jao, Jav

**5. Oat [Avena sativa]**

Oat is a minor grain and is likely to become less important as a feedstuff for animals. Oat is of low importance simply because the yield per hectare is much lower than other grains.

**6. Rice [Oryza sativa]**

Local Names

Hindi: Chaval

Tamil: Arisi

Telugu: Biyyam

**7. Rye [Secale cereale]**

Rye is the grain most tolerant of adverse growing conditions, like extreme cold and acidic soil conditions. Because of its poor palatability & presence of numerous deleterious factors use of rye in animal feed is very limited.

**8. Triticale [Triticum secale]**

Triticale is a hybrid cereal derived from crossing wheat with rye. The objective in crossing the two cereals was to combine the desirable characteristics of wheat such as grain quality, productivity and disease resistance with the vigour & hardiness of rye.

**9. Millet**

The name millet is frequently applied to several species of cereals which produce small grains and are widely cultivated in tropics. Millets has traditionally been viewed as a poor persons' crop, lacking prestige and appeal but it holds great potential as a food crop adapted to marginal, drought-stricken areas.

**10. Pearl millet [Pennisetum typhoides]**

Local Name:

Punjabi, Hindi, Gujrati, URDU – Bajra

Rajasthan & Marathi –Bajri

Telugu – Sajjalu

Kannada –Sajje

Tamil- Kambu

**B. Milling By-Products**

- |                                 |  |
|---------------------------------|--|
| 1. Wheat Milling by-products    | [a] Wheat bran [b] Wheat middlings     |
| 2. Rice Milling by-products     | [a] Rice bran de-oiled [b] Rice polish |
| 3. Barley by-products           | [a] Brewer's grain                     |
| 4. Grain distilling by-products |  |

**C. Molasses –**

Molasses is highly palatable and an excellent source of energy. The quality of molasses is measured by its sugar content, which is expressed by the term Brix. Brix is determined by measuring the specific gravity of molasses. Types of Molasses –

[a] Cane molasses

[b] Beet molasses

[c] Citrus molasses

#### **D. Roots & Tubers**

**Roots** – The most common root crops used in the feeding of farm animals are fodder beet, sugar beet and turnip.

1. Turnips [*Brassica rapa*]
2. Fodder beet
3. Sugar beet [*Beta vulgaris*]

**Tubers** – Tubers are various types of modified plant structures that are enlarged to store nutrients.

1. Cassava root [*Manihot esculenta*]
2. Potato [*Solanum tuberosum*]
3. Sweet potato [*Ipomoea batatas*]
4. Carrot [*Daucus carota*]

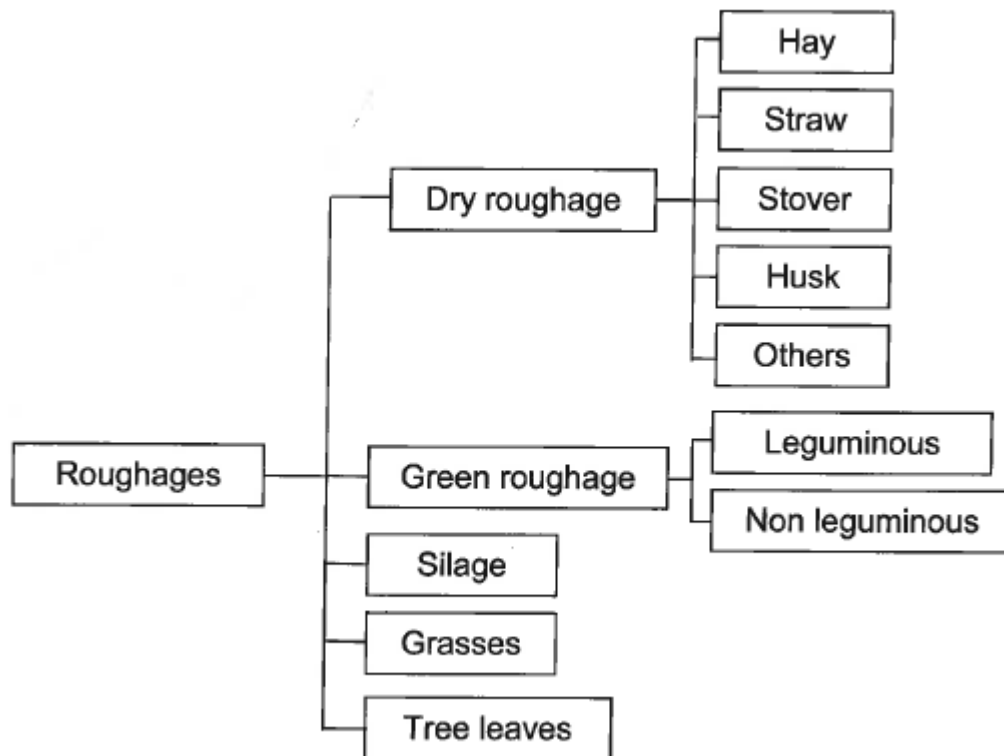
#### **2. Protein Sources**

**Plant Proteins** The bulk of the protein of ruminants comes from plant sources. Proteins in plants are primarily associated with the tissues which are actively metabolizing such as leaves, centres of growth and the seeds.

**Oilseed cakes & meals oilseed** cakes & meals are the residues remaining after removal of the greater part of the oil from oilseeds. The residues are rich in protein and most are valuable feeds for livestock. Types of meals are-

1. Soyabean meal [*Glycine max*]
2. Groundnut meal [*Arachis hypogaea*] [Moomphly]
3. Cottonseed meal [*Gossypium arboreum*] [Kapas]
4. Rapeseed\ Musturd meal [*Brassica juncea*]
5. Sunflower meal [*Helianthus annuus*] [Surajmukhi]
6. Safflower meal [*Carthamus tinctorius*] [Saffron]
7. Sesame meal [*Sesamum indicum*]
8. Coconut meal [*Cocos nucifera*]
9. Palm kernel meal [*Elaeis guineensis*]
10. Linseed meal [*Linum usitatissimum*] [Flax seed]

## B. Roughages



Roughages are bulky feeds containing relatively less digestible material i.e., crude fibre more than 18% and low [about 60%] in TDN on air dry basis. Most of roughages have a high content of cell wall material. The cell wall fraction may have highly variable hemicelluloses, pectin, polyuronides, silica and other components. In contrast to cereal grains, roughages generally are low in readily available carbohydrates.

The protein, mineral and vitamin contents of roughages are highly variable. Some roughages are relatively good sources of calcium and magnesium, particularly legumes.

Roughages are sub-divided into two major groups; dry and green or succulent roughages based upon the moisture content. Green roughages usually contain moisture from 60-90%, whereas, dry roughages contain only 10-15% moisture.

### Dry Roughages

1. **Hay**- A method of conserving green crops is that of hay making. The aim in hay making is to reduce the moisture content of the green crop up to 15-20%, to inhibit the action of plant and microbial enzymes. Thus, a green crop in a mature stage is preserved for a long time. According to the type of forages which are dried, hay is categorized as –[a] Leguminous [b] non leguminous [c] mixed

2. **Straw**

Inadequate production of green fodder in the country compelled the farmers to utilize dry roughages as livestock feed particularly for the ruminants. Due to unavailability of high-quality dry roughages, straw, bhusa and karbi form the major bulk of livestock feed in India. The types of straws are- [a] Cereal Straw [b] Pulse straw [c] groundnut straw.

3. **Husks**

1. **Rice Husk** – is the dry outer covering of rice grain, which is always removed during the milling of rice.
2. **Coffee husk** – is not palatable to cattle, and they can form only a small portion of rations fed to unproductive animals.
3. **Groundnut Husk** is also unpalatable to cattle and poorer in nutritive value.

4. **Maize Husk** is superior to even gram husk in its nutritive value.

Stover – Stovers are the mature cured stalks from grain crops, typically maize or sorghum, with the grain or corn removed. The two types of stovers are- [A] Sorghum stover [B] Maize Stover.

### **Green Roughages**

### **Cultivated Fodders**

Summer forages –

1. **Cowpea, lobia [Vigna unguiculata]**

Local Name: Hindi-Lobia, Barbati, Alsande  
Marathi- Chavli  
Tamil- Karamani  
Telugu- Bobbarelu, Alasandulu  
Kannada- Avadai  
Malyalam –Kottapayaru

2. **Sorghum or chari [Sorghum bicolor]**

Local Name  
Hindi- Jowar  
Tamil –Cholam  
Telugu –Jonnalulu  
Kannada- Jola  
Marathi- Jwari

3. **Maize [Zea mays]**

Local Name  
Hindi- Makka  
Tamil- Makka Cholam  
Telugu- Mokka Jonnalulu  
Kannada –Makkjola

4. **Mak Chari or Teosinte [Euchlaena Mexicana]**

Local Name –Hindi- Makai

5. **Soybean [Glycine max]**

**Local Name;** Soyabean

6. **Guar [Cyamopsis tetragonoloba]**

**Local Name:** Guar

7. **Barseem [Trifolium alexandrinum ]**

**Local Name :** Egyptian clover

8. **Lucerne [Medicago sativa]**

Local Name: Lucerne

9. **Oat [Avena sativa]**

**Local Names:** Oat, Jai, Ganer, Ganerji, Togi koddi

10. Senji or Indian sweet clover [Melilotus indica]

Synonyms: Trifolium indicum, Melilotus parviflorus.

11. Chicory [Cichorium intybus]

Synonyms: Coffeweed, blue sailors

12. Grasses

Napier grass [Pennisetum purpureum]

13. Anjan grass [Cenchrus ciliaris]

Local Name –Buffel grass, African foxtail.

14. Blue panic [Panicum antidotale]

Local Name- Blue panic, Hindi- Ghamari

15. Jerga grass [Dichanthium annulatum]

Local Name- Jerga grass, Blue stem, Marvel grass

16. Choti jergi [Bothriochloa pertusa]

Local Name- Choti jergi

17. Rhodes grass [Chloris gayana]

Local Name- Rhodes grass

18. Doob grass [Cynodon dactylon]

Common name- Bahama grass

Local Name- Sanskrit- Durva Haritali

Hindi- dhub, Hariali

Tamil- Arugam pillu, Hariali

Telugu – Garicha gaddi, Harvali

Kannada- Garikahullu, Kudigarike

19. Para grass [Brachiaria mutica]

Local names- Para grass, Buffalo grass, water grass, pani wali ghas.

20. Tree Leaves

Large varieties of plant materials which are conventionally not included in the feeds for livestock are used for feeding of cattle and other ruminants during periods of scarcity.

Pipal leaves [Ficus religiosa] –pipal tree

Bamboo leaves [Dendrocalamus strictus]

Neem [Azadirachta indica]

Mulberry leaves [Morus alba]

Ber leaves [Zizyphus jujuba]

Tapioca leaves [Manihot esculenta]

Ardu leaves [Ailanthus excels roxb]

Bhimal [Grewia optiva, Grewia oppositifolia]

Kachnar [Bauhinia variegata]

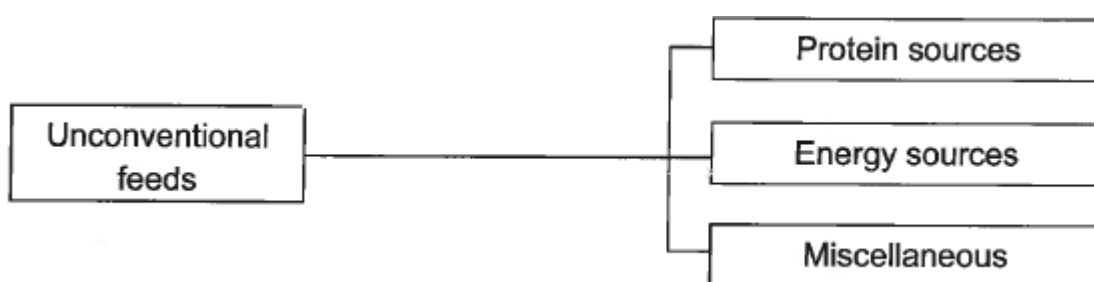
Robinia [Robinia pseudoacacia.

### Unconventional Feeds

The feeds which are traditionally not used for feeding animals are called unconventional feeds. Their use in livestock ration is increasing day by day due to shortage of animals feeds. The main source of such feeds is agricultural and forest by-products. Such feeds are not used either because of traditional beliefs of livestock owners or due to less palatability and presence of incriminating factors in them. Unconventional feeds are described under the following categories-

1. Protein sources
2. Energy sources
3. Miscellaneous sources.

#### **C. Unconventional Feeds**



#### **Miscellaneous unconventional feeds –**

1. **Seaweed meal [Sargassum spp.]** – seaweed is primitive type of plants growing in the intertidal or sub tidal regions of a sea.
2. Babul pods, seeds and babul seed chuni [Acacia nilotica]
3. Jackfruit waste [Artocarpus heterophyllus]
4. Sugarcane bagasse
5. Sugarcane tops [Saccharum officinarum]
6. Panewar seed [Cassia tora]
7. Palm male tree [Borassus flabellifer]
8. Warai bran [Panicum miliaceum]
9. Tea waste [Camellia assamica]
10. Tomato waste [Lycopersicon esculentum]
11. Banana root bulbs [Musa paradisiaca]
12. Potato waste

## 6. Ethnoveterinary Formulation

While we take care of cows with love and affection, we also need to be handy with the knowledge of solving diseases of cow with herbal medicines.

Below are few diseases with their tradition practices of veterinary medicines.

Diseases	Solution (Ingredients)	Application
Mastitis (All Types)	a) Aloe vera – 250 g; b) Turmeric- 50 g (rhizome or powder); c) Calcium Hydroxide (lime)-15 g; d) Lemon – 2 nos	Make a paste (a-c) and apply 10 times a day. Feed 2 lemons twice daily
Teat Obstruction	Freshly plucked & clean neem leafstalk– 1; Turmeric powder; Butter or Ghee	(i) Insert the coated neem leafstalk into the affected teat in an anti-clockwise direction. (ii) Replace with fresh neem leafstalk after each milking.
Under Oedema	Sesame or mustard oil – 200 ml; Turmeric powder-1 handful; Garlic-2 pearls.	(i) Apply in a circular manner with force over the entire oedematous region and udder. (ii) Apply 4 times a day for 3 days.
Retention of Placenta	White radish – 1 full tuber; Lady's finger - 1.5 kg; Jaggery- as required; Salt- as required.	Feed one full tuber radish within two hours of calving. Feed 1.5 Kg of fresh lady's finger with jaggery and salt if ROP persists after 8 hours of calving. In case ROP persists even after 12 hours of calving, tie a knot very close to the base and cut 2 inches below the knot and leave it. The knot will go in. Do not try to remove the retained placenta by hand. Feed one full tuber of radish once a week for four weeks

Similarly, we have natural cures for Repeat Breeding, Prolapse, FMD mouth lesions, FMD foot lesions/wound, Fever, Diarrhoea, Bloat and Indigestion, Worms, Tick/Ectoparasites, Pox/wart/cracks

## 7. Care and Management of Cow & Calf

### ***What is Gaushala ?***

Gaushala literally means home for cows and is meant to rescue, shelter, protect, feed, treat and rehabilitate weak, sick, injured, handicapped and abandoned homeless cattle. These are the institutions of India's great cultural heritage giving concrete example of India's reverence and affection for animals, particularly for cows.

The origin of Gaushalas can be traced back to the Vedic period when social customs and rules laid great emphasis on protection and development of cows for home and oxen for agricultural work. Presently there are more than five thousand Gaushalas in India. They house over six lakh cows maintained at an annual cost running into thousands of crores. Most of the Gaushalas are being run as charity institutions. The resources of these Gaushalas differ widely in respect to the number and quality of cattle in them, availability of land, their finances and organisation.

### ***The five freedoms to aim for a Gaushala are:***

- (1) Freedom from hunger and thirst by ready access to fresh water and a diet to maintain full health and vigour.
- (2) Freedom from discomfort by providing an appropriate environment including shelter and comfortable resting area.
- (3) Freedom from pain, injury and disease by prevention or rapid diagnosis and treatment.
- (4) Freedom to express normal behaviour by providing sufficient space, proper facilities and company of the animal's own kind.
- (5) Freedom from fear and distress by ensuring conditions and treatment, which remove mental suffering.

These five freedoms can act as a checklist of ideal conditions by which we can assess strength and weakness of any Gaushala and work on their improvement.

### ***What is called Adarsh Gaushala?***

Gaushalas are set up to rescue and take care of cattle that has been abandoned or illegally sent for slaughter. Feeding, watering, medical care, maintaining better hygiene and welfare along with providing comfort and protection from inclement weather to the cattle are the primary functions of a Gaushala.

### ***Selection of site for setting up an Adarsh Gaushala –***

- A. Location and Shape
- B. Availability of water
- C. Topography
- D. Connectivity
- E. Sun exposure and wind protection
- F. Orientation of sheds.



## 8. Cow - environment protection & climate change

### ***Cow Represents Earth and Life***

There are still parts of the world where people live a pre-industrial life. For example, Indonesian Borneo. Daily life in Borneo's upcountry is usually pleasantly dull, as chickens scratch around, the women fan rice on mats to dry it, thunderstorms roll through, the sun dries the muddy paths, flowers riot into bloom, and it all starts over again the next day. Pastoral Mongolia partially fits the category too, with its world revolving around camels, cows and sheep rather than rice and bananas.

Preindustrial life was easy on resources - both human and natural. Before capitalism, most people did not work very long hours. The tempo of life was slow, even leisurely; the pace of work relaxed. People were at peace and so was Earth's environment.

As we have seen in earlier pages, in a vast number of ways and places, the biosphere of this planet is undergoing a great deal of damage. Parts of the environment have already been rendered uninhabitable through toxic wastes and nuclear power plant disasters, while systemic pollution, ozone holes, global warming, and other disasters are increasingly tearing the fabric on which all life depends. That such damage is wrought overwhelmingly by corporations in a competitive international market economy has never been clearer, while the need to replace the existing society with one such as social ecology advances has never been more urgent.

Modernization, the replacement of machines for muscle, is a universal social solvent. Even when resisted by traditional leaders, modernization erodes established social, economic patterns, and threatens ecosystems.

Peasants and tribal members ultimately succumb to mechanisms yielding enhanced productivity. They rapidly scrap traditional practices in favour of those more materially productive.

This modernization has taken a toll on our connection with nature and general web of life. We, like all other life forms, are products of our environment. Its arrogance and ignorance to think that we can survive in isolation. The delicate web of life cannot be disturbed without endangering the human survival itself.

Anyone with an intact brain would admit the obvious and commonplace fact that animals play a conspicuous part in the life of man. Animals affect everyone's life, whether you're an animal-lover, animal-hater, animal-eater or animal-saver.

Every traditional economy was based on its animals and land. That way the human civilization survived for thousands of years. But in just last one hundred years, everything has been messed up. Survival of humanity and planet itself has come into question. Someone rightly put it, "In the end, cockroaches would prove to be more intelligent than humans if humans destroy themselves. Intelligence is really a survival skill for the entire species and that which survives proves intelligent on a species level."

Interestingly, Vedic literatures have words, 'Gau' or 'Gava'. If we go to Nirukta, the earliest book of etymology from India, and look up its meaning, the two primary meanings of the word gau', from which 'gava' is derived, are given in the following order:

- 1.The planet earth
- 2.The animal cow.

By using interchangeable words for cow and Earth, Vedas, the oldest repository of knowledge, emphatically state that cow is a representation of the planet earth itself. In almost all Indian languages, cow is known as 'gai'.

The cow is a complete ecology, a gentle creature and a symbol of abundance. The cow represents life and the sustenance of life. It is so giving, taking nothing but grass. For thousands of years, mankind lived happily,

depending on land and cows. To live with cows is to live in perfect cooperation with nature. In a society if you only had cows and agricultural pursuits, you wouldn't require anything else in the name of artificial luxuries.

Knowing something of the current state of the environmental movements, we can say with amazing certainty that cow protection and ox power are the very epitome of the bottom line in sustainability. No matter how we look at the topic, there is nothing that comes as close to solving all the problems of the modern world as do cow protection and ox power. Just name an issue of the day: air and water pollution, crime, poverty, unemployment, war, famine, hunger, disease, pestilence, floods, earthquakes, over grazing, global warming, deforestation, etc. A society based on the Vedic principles of cow protection and ox power knows none of these issues. Rama-rajya, or government by Lord Ramachandra, defines a society which is happy in all respects and where there exists perfect harmony between man, nature and other life forms. This is a society wherein no one even suffers from physical ailments or mental agony. In this society, the demigods or the controlling deities of nature are pleased to adjust universal affairs for the complete satisfaction of all the inhabitants, including even those lower than humans (the animals, birds, plants, fish, reptiles, and germs). And cow protection forms the backbone of such an ideal society.

### ***Cow & Environmental Protection***

Vedic culture's concern for nature and life in general is reflected in an attitude of reverence for the cow. Cow represents the Vedic values of selfless service, strength, dignity, and non-violence. For these reasons, although not all Hindus are vegetarian, they traditionally abstain from eating beef.

Vedic seers could see into the future... to our time when we would feed cows ground up cows and make mad cow disease ... a time when mankind would be all bad... they saw us abusing everything... from our fellow creatures to nature all around us.

Africans for thousands of years used cow dung cakes as fuel. In 18th and 19th century missionaries taught them to give up this 'uncivilized' practice. People turned to forests for fuel and in no time the continent was bald.

The cow dung is an important source of producing non-conventional energy. It is a substitute for firewood and electricity. As a result, the forests can be conserved and their faunal wealth can be enriched.

Every single aspect of cow protection interweaves with protection of our environment. In fact, care for cow represents care for life and nature in general. The cow is central to our life and bio-diversity. Cow protection has a great potential in poverty alleviation and employment generation. It deserves full support at all levels.

### ***Cow Slaughter, Catastrophes and Earthquakes—An Interrelationship***

The universe operates under the law of cause and effect. Every action involves and results in a reaction. In Vedic terminology, this is called law of karma. Put in simple words, law of karma is all about reaping what you sow. Life evens out. We have to pay for our deeds.

Law of Karma has had quite a karma. Long after India's seers immortalized it in the Vedas, it suffered bad press under European missionaries who belittled it as "fate" and "fatalism," and today finds itself again in the ascendancy as the subtle and all-encompassing principle which governs man's experiential universe in a way likened to gravity's governance over the physical plane. Like gravity, karma was always there in its fullest potency, even when people did not comprehend it.

Each of us as individuals, as well as each group and nation, is continually creating karma, both good and bad. All thoughts, words, or actions will sooner or later come full circle and return home to their creators. This is the universal Law of Cause and Effect, which is operating all the time, just like gravity, whether we choose to believe it or not.

"What goes around, comes around" is a statement of fact. An African tribe puts this in a colorful way: "He who excretes on the road, meets flies on his return." Karma plays a leading role in the world's drift toward environmental catastrophe, and a large part of this karma is generated by unnecessary killing of animals. Srila Prabhupada states, "We simply request, "Don't kill. Don't maintain slaughterhouses." That is very sinful. It brings a very awkward karmic reaction upon society. Stop these slaughterhouses. We don't say, "Stop eating meat." You can eat meat, but don't take it from the slaughterhouse, by killing. Simply wait and you'll get the carcasses."

### ***Cow Slaughter and Earthquakes***

Physicists M M Bajaj, Ibrahim and Vijayraj Singh have proposed the theory that animal slaughter and natural calamities like earthquakes have an interrelationship and research papers on this theory have been presented in many international conferences. The theory presents the hypothesis of large-scale abattoir activity as the causative agent for major earthquakes.

They put forward a forceful plea to stop slaughter of animals, birds, and fish with special reference to cows. Their theory makes an interesting reading because science still does not have proper answers as to why the earthquakes happen and how they can be predicted with reasonable accuracy. This theory is being hailed for filling the gaps in the science of seismology, still a nascent science.

The theory, with the help of highly technical and scientific jargon, attempts to explain that butchering of animals in the abattoirs worldwide has something to do with the quakes. The theory examines the complex role of nociceptive waves (or the waves generated by the animals on the verge of being butchered) in shear-wave splitting which is related to seismic anisotropy. This splitting is associated with the cracks in the crust aligned by stress. The origin of earthquakes due to the interaction of nociception waves with gravity waves is critically examined in the theory. An earthquake of 8 Richter occurs only when the resonant frequency is extremely high. Low frequency resonances lead to earthquakes of 0.1 to 0.2 Richter. Low frequency resonances are hardly felt or realised by the ordinary people. High frequency resonances (originating from the slaughter of millions of animals daily for years together) lead to powerful singularities with the gravity waves. In this way the theory proposes that shear wave splitting mainly occurs due to aligned fluid-filled inclusions and abattoir activity.

### ***Dying Animals Cause Acoustic Anisotropy***

Authors make a point that acoustic anisotropy leads to a very strong anisotropic stress on a rock. The daily butchering of thousands of animals continually for several years generates acoustic anisotropy due to Einsteinian Pain Waves (EPW) emitted by dying animals. And the accumulated acoustic anisotropy is found to be related with the stress history of rocks. Nociception waves interact with the earth's natural rhythmic vibrations and lead to responses which are extremely powerful (of the order of 10 40 MW) causing crack density (CD) which is directly proportional to EPW. Also, the factor of tectonic plate movement has been taken into account. The Einsteinian Pain Waves are responsible for the release of Radon in the ground. The increase of Radon concentration in the groundwater and its relationship with the earthquakes is said to have been experimentally verified by several Chinese and Japanese scientists. Fault lines of the earth provide the most convenient place for the release of pressure induced by the geomorphological process and triggered by LSFAO

(living state forced annihilation operator of beta type). BIS effect of type II is able to trigger the seismic episodes of 6 to 7 Richter.

The theory claims that since the EPW travel a great distance with time, abattoirs of one location may lead to havoc in another geographical area. Theory proposes closing down of all the abattoirs in the world. This theory is a 600-page work and its hypotheses make liberal use of complex mathematical and statistical formulas.

The theory also explores the possibility of earthquake prediction based on well-defined principles. Theory may present answers to the question as to why experts have so much trouble in predicting earthquakes.

This subject has originated from the Bajaj-Ibrahim-Singh effect or BIS effect and it was first presented in Suzdal (Russia) in 1995. Since then some scholars have written chapters on Bisology in their books, an Indian Journal has brought out a special issue devoted to the subject and several scholars have studied this subject in their Ph.D theses submitted to different universities around the world.

### ***Stop Killing the Cows, Stop Killing the Planet***

We can safely conclude that reducing or eliminating meat consumption would have substantial positive effects on the environment. Fewer trees would be cut, less soil would be eroded, and desertification would be substantially slowed. A major source of air and water pollution would be removed, and scarce fresh water would be conserved. "To go beyond beef is to transform our very thinking about appropriate behaviour toward nature," says Jeremy Rifkin. "We come to appreciate the source of our sustenance, the divinely inspired creation that deserves nurture and requires stewardship. Nature is no longer viewed as an enemy to be subdued and tamed."

## 9. Cow: An Engine of Progress and Prosperity

In last several decades, world economy has been globalized and its not the best thing to have happened to our finances. The economic system built on a need for constant growth obviously can't last long in a finite world. Small is beautiful...and sustainable. There are limits to growth and the world economy has crossed these limits. The history is trying to repeat itself in last two years. Headlines are blaring - Financial markets in a free-fall, Chaos on Wall St., International markets in a tailspin, European bailout, more banks to fail, Investors shy away amidst growing fears, Congress approves bailout, 51 Million to lose jobs, China goes down in first quarter etc.

These foreboding headlines are indications of something coming out way, if we are willing to listen. Global Financial system is increasingly proving to be a farce and it has become exponentially more so as Treasury/Federal Reserve bailouts in the financial sector become the rule rather than the exception.

America's unquenchable materialistic appetite is the machine that fuels a global economy. Japan's economy would collapse if it were not for the billions of dollars per year gained in trading with America. When America goes into a recession, the world follows. When America's economy is doing fine, so does the worlds.

### ***Living Cows - Better Than Dead Ones***

A man and his wife owned a very special goose. Every day the goose would lay a golden egg, which made the couple very rich. "Just think," said the man's wife, "If we could have all the golden eggs that are inside the goose, we could be richer much faster." "You' re right," said her husband, "We wouldn't have to wait for the goose to lay her egg every day." So, the couple killed the goose and cut her open, only to find that she was just like any other goose. She had no golden eggs inside of her at all, and they had no more golden eggs.

This is among the best known of Aesop's Fables and use of the phrase has become idiomatic of an unprofitable action motivated by greed. Cow killing bears resemblance to the man's folly in the story. We are slaughtering cows to get beef. But cows can give much more daily. It is our obstinacy or ignorance of her contributions that makes us kill and eat her.

In 1971 Stewart Odend'hal of the University of Missouri conducted a detailed study of cows in Bengal and found that far from depriving humans of food, they ate only inedible remains of harvested crops (rice hulls, tops of sugarcane, etc.) and grass. "Basically, he said, "the cattle convert items of little direct human value into products of immediate utility." This should put to rest the myth that people are starving in India because they will not kill their cows. Interestingly enough, India seems to have surmounted her food problems, which have always had more to do with occasional severe drought or political upheaval than with sacred cows. A panel of experts at the Agency for International Development, in a statement cited in the United States Congressional Record for December 2nd 1980, concluded "India produces enough to feed all its people."

If allowed to live, cows produce High quality, protein rich foods in amounts that stagger the imagination. It is abundantly clear that cows (living ones) are one of mankind's most valuable food resources.

### ***Life Line of A Nation***

India has thirty percent of the world's cattle and there are twenty-six breeds. The cow is a symbol of wealth and abundance and has a place everywhere in India. Cows can be seen wandering along the city streets and country sides, on posters and carved from wood and stone. They are allowed to roam freely and subsist on garbage or grass along the roadside. Of course, all this is changing now and apathy towards cows is growing.

Cow slaughter is banned in India except in two states, West Bengal and Kerala. Cows are regularly shipped to these two states for slaughter even though it is illegal to transport them across borders. Cow transport in India is extremely cruel and many get injured and die in the process. For days and weeks together, cows and bulls travel in trucks or railway wagons, crammed and without food or water. This sort of treatment to a gentle and innocent animal is the last frontier of inhumanity.

Cow products like milk, yogurt, ghee, buttermilk and cheese are indispensable ingredients in Indian cuisine. Indian kitchens require liberal stock of these valuable products on day-to-day basis. Male calves are highly valued by Indian farmers unlike in West where they are slaughtered at a very young age. Male calves as oxen form the backbone of Indian agriculture and rural transport. In post-harvest operations, they stomp through mounds of cut wheat and rice. A farmer's loss of cattle can affect his livelihood and when a cow dies, she is mourned like a family member.

One living cow gives in a year 230 kg. of methane gas, organic fertilizers for 3-4 acres land and 600-3000 litres of milk. But unfortunately, every day in India over a hundred thousand cows are killed now.

Traditionally in India, cow was reared mainly for her urine and manure. Milk was considered a by-product. As the science of utilizing these products was lost, cow's utility came to be confined to her milk. As a result, as soon as she goes dry, she is a burden and ends up in a slaughter house. Fortunately, India is seeing a revival of cow product manufacturing. In various cow shelters and villages across the country, dozens of products are being produced from cow urine and dung. Products like medicines, fertilizers, pesticides, soaps, toothpowder, paper, tiles, coils, incense, phenyl, hand wash, glass cleaner etc. are becoming popular. If this aspect of cow economics is rightly promoted, the Indian villages once again can become prosperous. Chemical fertilizers and pesticides are wreaking havoc on agriculture and thousands of farmers are committing suicide every year.

### ***India Needs Cow***

Agriculture, the NCEUS report found, was a fertile ground for poverty, especially for small and marginal farmers, 84 per cent of whom spent more than they earned and were often caught in debt traps. Reintroduction of cows can drastically change the rural landscape in India but the entire government machinery is geared towards killing and exporting cows. After independence, it took 65 long years for the Indian leaders to realize their cherished dream - to make India a world leader in beef export. This feat was achieved in year 2012 under the able leadership of a cow eating leader. And now finally the founders of modern India can rest in peace. Having realized their dreams, these founders must be revelling in their graves.

### ***Wealth Means Land, Cows and Grains***

According to the Vedic Scriptures real wealth means to possess some land, cows and a store of grains. These things are practical. The land and the forests in conjunction with cows and food grains provide all the necessities of life. Financial adviser Howard Ruff and survivalist Sally Harrington, are more down to earth. In a world spinning toward political, economic, and ecological disaster, Ruff explains why grains and beans are at least as good an investment as silver and gold.

"You spend hundreds of dollars every year to insure your cars against the accident you fully expect not to have," says Ruff, "and you can't eat the cancelled checks. Your money is wasted unless you're 'lucky' enough to have an accident. Food storage is the insurance you can eat."

Adds Harrington, "Wheat, if kept dry and protected from rodents and insects, will last for two or three thousand years. Some that was found in King Tut's tomb was still edible, and it even germinated." The forests provide building materials for dwellings, honey, flowers, fruits and medicinal herbs and drugs. The rivers

provide fresh drinking water and are a source of natural fertilizer and gems. By the arrangement of nature, the rivers flood the land periodically, thus replacing the lost nutrients in the soil.

If you have grains, fruits and dairy products like milk, cheese, cream, yogurt and butter, you can live happily ever after. Fact is, you cannot eat your currency notes or computer chips.

By nature's perfect arrangement, land and cows complement each other in maintaining the cycle of life. Land supports cow by supplying her feed and she replenishes the land with her manure. When the cow population swells, the soil in the area comes alive. If cows are allowed to graze on waste or barren land, gradually its fertility returns. This is because Goddess of Prosperity resides in cow dung. In India of yesteryears, there were so many happy cows they used to moisten the ground with their milk. Today it's their blood that is splattered all over.

## 10. About Rashtriya Kamdhenu Aayog.

This government is doing remarkable work in the field of Gau-Sanskriti. Rashtriya Kamdhenu Aayog is one of such initiative. Let's learn more about Rashtriya Kamdhenu Aayog, its vision and mission.

**Vision:** Re-establishing Gau-Sanskriti for Socio Economic and Spiritual transformation for Glorious and Divine India of 21st Century.

**Mission:** Establishing Sustainable Cow based economy through Conservation, Protection and Development of Cows and their progeny while enhancing sustainable values for all stakeholders, viz., Youth employment, farmers welfare and rural development.

**Objectives:** The Rashtriya Kamdhenu Aayog has been constituted for the conservation, protection and development of cows and their progeny; for proper implementation of laws with respect to prohibition of slaughter and/or cruelty to cows and for giving direction to the cattle development programmes.

The RK Aayog is a high-powered Permanent Body to formulate policy and to provide direction to the implementation of schemes related to cattle so as to give more emphasis on livelihood generation of small and marginal farmers.

### **Functions:**

1. To advise and guide the Central Government and State Governments on policy matters concerning conservation, protection, development and welfare of cows and their progeny.
2. To help the Central Government to develop appropriate schemes/ programmes for sustainable development of cows in the country and to suggest measures for optimum economic utilization of cow wealth.
3. To review existing laws, policies and programmes [centre and state] which relate to conservation, protection and development of cows and to suggest measures for their effective implementation and to work for welfare of the cow and its progeny in the country.
4. Promote schemes to encourage use of organic manure and recommend suitable measures including incentive schemes for use of dung or urine of cow in organic manure by farmers to minimize the use of chemical fertilizers.
5. To effect co-ordination and integration among various agencies having stake in development of **Indigenous Cow Breed**.
6. To make provisions for solutions to the problems related to abandoned cows in the country by providing technical inputs to Gaushalas, Gosadans and Panjrapoles.
7. In the area affected by famine, drought or other natural calamities guide in setting up cattle camps for the aforesaid purposes in the affected areas and to take steps to prevent migration or smuggling of cows from such affected areas.
8. Develop pastures or grazing lands and to associate with institutions or other bodies whether private or public, for the purpose of developing pastures and Gauchars.
9. To create awareness about the significance of Indigenous breeds of cow, its milk and allied dairy products and use of draft power.
10. Research & Development work in collaboration with any veterinary, Animal Sciences or Agriculture Universities or Departments or organizations of the Central/ State Government engaged in the task of research in the field of breeding and rearing of cows, organic manure, biogas etc. as also to collaborate with such of the research projects of Indian system of medicine conducted by various public or private organizations for conducting research on the biogenic products of the cow for medicinal purposes.
11. To ensure transmission and application of improved technology and management practices at the farmers' doorstep and the entrepreneurs.



12. To create an enabling environment to attract investment for improving infrastructure supporting milk production, processing, value addition and marketing in the sector.
13. To analyse requirement of human resources in the sector and suggest measures to enhance availability of skilled manpower.
14. Any other function that supports development of cows, their progeny and breeds.

#### **Team Rashtriya Kamdhenu Aayog**

##### **Chairman**

**Dr. Vallabhbhai Kathiria** [Cancer Surgeon]  
Ex-MoS: Govt. of India, Ex-MP [Lok Sabha]-Rajkot,  
Ex-Chairman, Gausewa & Gochar Vikas Board, Gujrat

##### **Vice Chairman**

**Shri Atul Chaturvedi**, IAS,  
Secretary, Department of Animal Husbandry & Dairying.  
Government of India.

##### **Members**

<b>Shri Sunil Mansinghka</b> Coordinator, Go-Vigyan, Anusandhan Kendra, Deolapar, Nagpur, Maharashtra	<b>Shri Hukum Chand Sawla</b> Eminent Social Worker, Indore, Madhya Pradesh	<b>Dr. M. S. Chauhan</b> , Director, National Dairy Research Institute, Karnal, Haryana.
<b>Shri Girish Sohani</b> President, BAIF Development Research Foundation, Pune.	<b>Shri Ashok Kumar Barman</b> ACS, Director, Animal Husbandry & Veterinary, Government of Assam	<b>Dr. U. P. Singh</b> Director, Department of Animal Husbandry, Government of Uttar Pradesh.
<b>Dr. C. Balachandran</b> Vice Chancellor, Tamilnadu Veterinary & animal Sciences University (TANUVAS), Chennai	<b>Dr. Rameshwar Singh</b> Vice Chancellor, Bihar Animal Sciences University, Patna.	

##### **Member Secretary**

Dr. O.P. Chaudhary, IFS  
Joint Secretary (NLM), Department of Animal Husbandry & Dairying  
Government of India.

#### ***Rashtriya Gokul Mission***

The Rashtriya Gokul Mission has been implemented for development and conservation of Indigenous bovine breeds since December 2014. Scheme is crucial for upliftment of rural poor as more than 80% low producing indigenous animals are with small and marginal farmers and landless labours. The scheme is important in enhancing milk production and productivity of bovines to meet growing demand of milk and making dairying more remunerative to the rural farmers of the country. The scheme is leading to multiplication of elite animals of indigenous breeds and increased availability of indigenous stock.

## ***Research Institutes on Indigenous Cattle***

### **1. ICAR – Central Institute for Research on Cattle, Uttar Pradesh**

Established by the Indian Council of Agricultural Research (ICAR), New Delhi, India, in the seventh Five-Year Plan. It was introduced 3 November 1987 at the Military Farm School and Research Centre in Meerut, with the objective of studying the genetic aspects of Holstein x Sahiwal crossbreeds and those of important indigenous cattle breeds for their improvement through selection. Another objective was to record field performance data for large-scale progeny testing of bulls, using private herds.

- Indigenous Breeds Maintained – Haryana, Gir, Kankrej, Ongole, Sahiwal

### **2. Livestock Farm – National Dairy Research Institute, Karnal, Haryana**

National Dairy Research Institute, Karnal maintains an experimental dairy herd consisting of two breeds of Indigenous cows (Sahiwal and Tharparkar).

- Breeds Maintained – Tharparkar & Sahiwal

### **3. Southern Regional Station, NDRI, Bangaluru, Karnataka**

- Breeds Maintained – Deoni & Malnad Gida

### **4. Central Cattle Breeding Farm – Surtgarh, Rajasthan**

- Breed Maintained – Tharparkar

### **5. Central Cattle Breeding Farm – Chiplima, Odisha**

- Breed Maintained – Red Sindhi

### **6. Cattle Breeding Farm – Junagadh, Gujarat**

This farm has an organized herd of purebred Gir cattle (Started 1920) and Jaffrabadi buffaloes (Started September 1978). This farm is involved since last many years in the conservation, improvement and advancement of above breeds through various Plan, Non-plan and ICAR funded projects. The farm is also actively involved in breed improvement of field animals through field progeny testing programme and supply of breeding bulls as well as frozen semen doses of high genetic merit to Field AI centers, Gram Panchayat, Gaushalas, Religious, Government organizations and other agencies.

- Breed Maintained – Gir

### **7. Cattle Breeding Farm – Thara, Banaskantha, Gujarat**

Established with an objective for conservation and improvement of Indigenous Cattle Breed i.e Kankrej. Cattle Breeding Farm has been established at Thara during the year 1966. Cattle breeding farm is maintaining a herd of Kankrej with more than 300 cattle.

- Breed Maintained – Kankrej

### **8. Livestock Research Station – Sardarkrushinagar, Dist. Banaskantha, Gujarat**

Livestock Research Station, Sardarkrushinagar was established in a year 1978 with the mandate of conservation, genetic improvement and supply of superior germplasm of Kankrej cattle. As a result of selective breeding, over last 40 years along with scientific feeding and better farm management this station has emerged out with the distinct animals of Kankrej cattle to be recognized as milch cattle breed. The Livestock Research Station is maintaining around 420 heads of cattle.

- Breed Maintained – Kankrej

9. Livestock Research Station, RAJUVAS, Bikaner, Rajasthan

- Indigenous Breeds Maintained – Rath, Tharparkar, Sahiwal, Kankrej, Gir, Malvi

10. Livestock Research Station, Palamaner, Andhra Pradesh

The Livestock Research Station, Palamaner was started on 13.08.1954 (1954-55) by the Animal Husbandry Department, Govt. of A.P. with A specific objective of improving & reviving “Punganur” one of the world’s shortest breeds of cattle, native to Chittoor District. As this breed is noted for its short size, low maintenance and comparatively good milk yield. Then this Research station was transferred to the Andhra Pradesh Agricultural University in the year 1967 from the Animal Husbandry Department. Presently the center is maintained by Shri Venkateswara Veterinary University, Tirupati.

- Breed Maintained – Punganur

11. Livestock Research Station, Lam Farm Guntur, Andhra Pradesh.

The Livestock Research Station, Guntur is maintained by Shri Venkateswara Veterinary University, Tirupati. A new project on Conservation of Ongole cattle was commenced in this station from 1-4-2014 under breed conservation programme of National Bureau of Animal Genetic Resources (NBAGR), Karnal sanctioned by ICAR, New Delhi for a period of 3 years beginning from 2014 -15 to conserve the native Ongole cattle in its breeding tract by conducting A.I to the farmers’ cattle with superior germplasm at field level through the nodal agencies. In addition, Embryo transfer technology was implemented from 2000 to 2007 and produced frozen embryos of native Ongole cattle.

- Breed Maintained - Ongole

12. The Livestock Research Station, Mahanandi, Andhra Pradesh

- Breed Maintained - Ongole

13. Cattle Breeding Farm – Mandvi, Surat, Gujarat

With an objective of conservation and improvement of Indigenous Cattle Breed i.e Kankrej, Cattle Breeding Farm has been established at Mandvi during the year 1963. The Farm is maintaining more than 300 Kankrej cattle.

- Breed Maintained – Kankrej

14. Livestock Research & Information Center, Hallikhet, Bidar, Karnataka

Livestock Research and Information Centre (Deoni), situated along State Highway 105 (Bidar – Humnabad road) in village Katti Tugaon, Bidar, is a constituent research and extension unit of the Karnataka Veterinary, Animal & Fisheries Sciences University, Bidar. It was established in the year 1970 over an area of 57 acres. The primary mandate of the Centre is to conserve and propagate the Deoni breed of cattle, which is the only viable dual-purpose cattle breed of Karnataka. 15. Shree Nasik Panchavati Panjrapole (SNPP), Nashik, Maharashtra A Registered Public Charitable Trust, currently sheltering approximately 1300 cows in three farms at Nashik, care for old, sick, weak, disabled and stray animals, particularly cows abandoned by others.

- Breed Maintained – Deoni

16. Shri Godham Mahatirth, Pathmeda, Ahmedabad, Gujarat

- Total No. of Animals – 1,44,000

17. Cattle Breeding Farm, Udgir, Maharashtra

Late Shri Munshi Abdul Rehman established Deoni Cattle Breeding Farm, Udgir in the year 1952 at the regime of State Government, Hyderabad. After that this farm was in the control of Department of Animal Husbandry, Government of Maharashtra. From 1987 this Farm transferred to COVAS, Udgir under Marathwada Agricultural University, Parbhani. Now it has been transferred in the control of COVAS, Udgir under Maharashtra Animal and Fishery Sciences University, Nagpur.

- Breed Maintained – Deoni

18. BAIF Central Research Station, UruliKanchan, Pune, Maharashtra

- Breed Maintained – Gir, Kankrej, Sahiwal, Red Sindhi, Khillar & Haryani

19. Sabarmati Ashram Gaushala, Bidaj, Sabarmati, Gujarat

- Breed Maintained (Bull) – Amritmahal, Dangi, Gangatiri, Gir, Khillar, Krishna Valley, Nimari, Ongole, Red Kandhari, Sahiwal, Gaolao & Tharparkar.

### ***The Successful Ecofriendly Campaigns***

**Gomaya Ganesha** - In June 2020, the Prime Minister Said in his **Man Ki Bat** session to celebrate the eco-friendly Ganesh Chaturthi festival, keeping this in mind, the Rashtriya Kamdhenu Aayog started a campaign to celebrate Ganesh Chaturthi all over india by making Ganesha idol with Cow dung and named it GOMAYA GANESHA.

Cow Dung is a product that does not cause any harm to aquatic animals and increase soil fertility when kept on land.

**Kamdhenu Deepawali** – This was the campaign through which 33 crore Gomaya Diyas were lighted in Deepawali across India. People of all classes participated in this campaign. This Campaign was a big success of Rashtriya Kamdhenu Aayog. Each and every state sold Gaumay diyas. This led to monetary gains to the remotest person who had only one or two cows. People at the remotest place participated with zeal and enthusiasm.

### **11. Which Dignitary said what about Cow.**

1. Bhagwaan Mahavir – Without saving cow, humanity cannot be saved.
2. Bhagwaan Buddh – Parents, Brother, Sisters are part of family in the same way as our cow is.
3. Mohammed Pegambar – Cow is the best in all animals. Its milk, curd, ghee are like nectar. Cow meat (beef) is the main reason of disease.
4. Jesus Christ – Killing a cow is equal to killing a human being.
5. Mahatma Gandhi – cow is the formula of Progress and development of a nation.
6. Acharya Vinoba Bhave – Serving the cow is culture of Hindustan.
7. Maharishi Arvind – Cow is giver of Dharma (righteousness, moral values), Artha (prosperity, economic values), Kama (pleasure, love, psychological values) and Moksha (liberation, spiritual values).
8. Madan Mohan Malviya – If we save cow only then will we be saved.
9. Devrishi Baba – for a nation or Dharma to succeed, cow killings should be stopped.
10. Cow is symbol of Spiritual Divinity – Anonymous.

## 12. Patent

There are some of the Patents that GauVigyaan Anusandhan Kendra holds –

1. Pharmaceutical composition containing cow urine distillate and an antibiotic.

Patent: United States 6,410,059 (2002)

Abstract: A pharmaceutical composition comprising an antibiotic and cow urine distillate in an amount effective to enhance antimicrobial effect of the antibiotic is disclosed. The antibiotic can be an antifungal agent. The antibiotic can be a quinolone or a fluoroquinolone. The antifungal agent can be azoles, clotrimazole, mystatin or amphotericin.

One can see detailed description of it with all the history, papers and diagrams on following link –

<http://patents.google.com/patent/US6410059B1/en>

2. Use of bioactive fraction from cow urine distillate ('Go-Mutra') as a bio-enhancer of anti-infective, anti-cancer agents and nutrients.

Patent: US 6896907 (2005), US 7235262 (2007), KR (Korea) 848394, CN (China) 1234372, MX (Mexico) 234519, CA (Canada) 2425025, AU (Australia) 2001230486, DE (Germany) 60012996.

Abstract: The invention relates to a novel pharmaceutical composition comprising an effective amount of bio-active fraction from cow urine distillate as a bioavailability facilitator and pharmaceutically acceptable additives selected from anticancer compounds, antibiotics, drugs, therapeutic and nutraceutical agents, ions and similar molecules which are targeted to the living systems.

One can see detailed description of it with all the history, papers and diagrams on following link –

<https://patents.google.com/patent/US7235262B2/en>

1. Synergistic Bioinoculant composition comprising bacterial strains of accession Nos. NRRL B-30486, NRRL B-30487 and NRRL B-30488 and a method of producing said composition thereof.

Patent: US7097830 (2006)

Abstract: The present invention relates to synergistic composition useful as bioinoculant, said composition comprising bacterial strains of accession Nos. NRRL B-30486, NRRL B-30487 and NRRL B-30488, individually or in all possible combinations and optionally carrier, with each of the strains showing plant promoter activity, phytopathogenic fungi controlling activity, abiotic stress conditions tolerating capability, phosphate solubilization capability under abiotic stress conditions; further a method of producing said composition thereof, and in addition, a method of isolating said bacterial strains for cow 'Sahiwal'.

One can see detailed description of it with all the history, papers and diagrams on following link –

<https://patents.google.com/patent/US7097830/en>

2. Synergistic fermented plant growth promoting, bio-control composition.

Patent: US7297659 (2007)

Abstract: The present invention relates to a synergistic composition useful as plant and soil health enhancer, comprising urine, neem and garlic, individually or in all possible combinations, with the treatment showing it has the ability to stimulate accumulation of nutrients in the plant biomass, proliferation of plant growth promoting, phosphate solubilizing, abiotic stress tolerant and antagonists towards plant pathogenic fungi, control phytopathogenic fungi in the rhizosphere of plants, and enhances the total phenolic contents of the plants.

One can see detailed description of it with all the history, papers and diagrams on following link –

<https://patents.google.com/patent/US7297659B2/en>

3. A composition (RCUD) for protecting and/or repairing DNA from oxidative damages and a method thereof

Patent: US7718360 (2010), China Patent: Publication No. 17771045 (2009)  
Announcement No. 100475221

Abstract: For one kind of protective and / or repair of oxidative DNA damage useful composition, said composition comprising cow urine distillate was redistilled (RCUD), wherein RCUD comprising benzoic acid and hexanoic acid component, the content of ammonia in the range of the composition is 5- 15mg / L, and optionally an antioxidant; and a method of using the composition of claim 1 in the prevention and / or repair of oxidative DNA damage, the method comprising the steps of claim: determining the amount of DNA in the sample folded in the DNA damage after exposure to DNA before or oxidizing agent, mixing the composition into the DNA and determine the percentage of folded DNA mixture, indicating protection of oxidative DNA damage and / or repair.

One can see detailed description of it with all the history, papers and diagrams on following link – <https://patents.google.com/patent/CN100475221C/en>